

**STATE OF CALIFORNIA  
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL COAST REGION**

**STAFF REPORT FOR REGULAR MEETING OF NOVEMBER 29, 2000**

Prepared on October 23, 2000, Revision 4

**ITEM NUMBER:**

**SUBJECT: REVISION OF WASTE DISCHARGE REQUIREMENTS FOR THE  
MONTEREY REGIONAL WASTE MANAGEMENT DISTRICT,  
MONTEREY PENINSULA CLASS III LANDFILL, MONTEREY COUNTY--  
ORDER NO. 00-103.**

**KEY INFORMATION:**

**Location:** One mile east of State Highway 1, two miles north of the City of Marina, 12 miles north of the City of Monterey  
**Type of Wastes:** Non-hazardous municipal solid wastes and limited non-hazardous drilling materials  
**Design Capacity:** 63.2 million cubic yards  
**Remaining Capacity:** 49 million cubic yards (34.3 million tons)  
**Disposal:** Land  
**Existing Order:** Waste Discharge Requirements Order No. 93-063

**SUMMARY:**

The existing Waste Discharge Requirements (WDRs) Order No. 93-063 for Monterey Peninsula Landfill (Landfill) require revision to reflect current-site operation and state regulations.

The proposed WDR reflect the current landfill operation. The California Code of Regulations (CCR) Title 27, Division 2, issued in August 1997, consolidated regulations from both the State Water Resource Control Board and the California Integrated Waste Management Board (CIWMB). Title 27, Division 2 pertaining to municipal solid waste landfills. Those requirements are also incorporated into the proposed requirements.

Proposed WDR Order No. 00-103 is significantly reduced in size from WDR Order No. 93-063. This reduction is due to the elimination of findings sufficiently addressed in this staff report, reduction of the number of provisions that repeat state and federal regulations, and the use of standard provisions specifically for municipal solid waste landfills.

**DISCUSSION:**

**WHY:** The current WDRs (Order No. 93-063) were issued in 1993. Since 1993, the Landfill has undergone a number of operational changes. On July 18, 1997, CCR, Title 23, Division 3, Chapter 15 regulations governing discharges of solid waste were replaced by Title 27, Division 2. These WDR are being revised and updated to reflect change in regulations.

Proposed WDR Order No. 00-103 is intended to be less complex than current WDR Order No. 93-063. Changes result from:

- The elimination of findings that are sufficiently addressed in this staff report;
- Reduction of WDR provisions that are sufficiently addressed in California Code of Regulation Title 27 and 40 CFR 257 and 258, and do not warrant repeating in WDR; and,
- Transferring many of the WDR provisions to "Standard Provisions for Waste Discharges Subject to California Code of Regulations Title 27, September 2000."

**FACILITY DESCRIPTION:** The landfill is located on the western margin of the Salinas Valley and on the coastal plain of Monterey Bay, bordered by the Salinas River to the north and by agricultural and grazing land along its other boundaries, refer to Attachment A of WDR No. 00-103. The 475-acre site is owned and operated by Monterey Regional Waste Management District as a Class III municipal solid waste landfill serving a population of 175,000. The disposal operation services a large part of Monterey County. The area surrounding the landfill is largely agricultural and no residences are located within one mile of the site.

The original Landfill parcel elevation ranges from 10 feet above mean sea level (MSL) in the Salinas River floodplain to 145 feet above MSL in the upland plateau. The peak Landfill elevation at closure will be approximately 260 feet above MSL.

Because the Pacific Ocean is near the landfill, it is influenced by marine weather conditions. Temperatures range from an average low of 42 degrees Fahrenheit in January to an average high of 72 degrees Fahrenheit in September. Average annual rainfall from the 14-year period ending in December 1997 was 14.81 inches. During this period, the annual rainfall amounts ranged from a low of 9.83 inches (1988-89) to 23.81 inches (1982-83). Approximately 90% of the annual precipitation occur between November and April.

**GEOLOGY:** Soils of the Landfill's upland plateau are underlain with over 100 feet of permeable dune sand. The upper 30 feet of exposed sand is actively drifting, while underlying sands are lightly-cemented and stabilized. Clay lenses lie within the dune sand and cause perched ground water to daylight as springs along the bluffs. Soils in the low alluvial terrace consist of interbedded clay silts, and fine to medium grained sands.

The Landfill is located in an area of northwest-trending faults, which characterize the boundary between the North American and Pacific plates. The San Andreas fault is located approximately 15 miles northeast and is the most important seismic source for the Landfill. The Class III lined landfill must be designed to withstand the maximum probable earthquake (MPE) that is likely to occur during the 100-year period. The MPE for the San Andreas fault for the Landfill is 8.25 (Richter Scale) with expected recurrence interval of approximately 282 years.

**HYDROGEOLOGY:** There are three confined aquifer systems exist beneath the Landfill: the 180, 400, and 900 foot aquifers. Since the three confined aquifers are fairly deep, they are unlikely to have been impacted by the landfill operation, there is no monitoring required in these deep aquifers. The 180-foot and 400 foot aquifers are the primary water supply aquifers for the area.

The perched aquifer system beneath the Landfill is unconfined and consists of three shallow aquifers at the site. The first (uppermost) saturated aquifer is the 80-foot zone (80 feet above MSL), the second is the 35-foot aquifer (35 feet above MSL) and the third is the 2-foot aquifer (bottom of this aquifer occurs approximately seven-feet below MSL and the top is approximately seven-feet above MSL).

**80-foot Zone:** The 80-foot zone is a localized perched zone present only in the former liquid waste treatment area in the upland plateau. The top of this zone is perched at approximately 80-feet above MSL. Depth from the top of the upland plateau to the 80-foot zone is approximately 30 feet. The area is used as a borrow source for on-site construction activities and will be completely excavated prior to the construction of future landfill modules in approximately 50 years. The perched 80-foot zone is not monitored due to its inconsistent presence. However, seeps from the north- and northeast-facing slopes indicates the 80-foot zone has a component flow to the north and northeast.

**35-foot Aquifer:** The 35-foot aquifer consists of poorly graded silty sand. The aquifer is perched and ranges from 2 to 20 feet in thickness. The top of this aquifer is perched at approximately 35 above MSL. Depth from the top of the upland plateau to the 35-foot aquifer is approximately 75 feet. Ground water movement tends to parallel the topography of the upland area and away from a topographic high on the plateau. Regionally, ground water flows to the north and northeast. The average hydraulic gradient is 0.0035 ft/ft and the average ground water velocity is 24 ft/yr. As with the 80-foot zone, the 35-foot aquifer will be completely excavated prior to the construction of future landfill modules in approximately 50 years.

2-foot Aquifer: The 2-foot aquifer is more extensive than the 80-foot zone and the 35-foot aquifer. It underlies both the upland plateau and the lowland area and is the first encountered ground water below the municipal refuse at the site. Depth to ground water in the 2-foot aquifer ranges from five feet to fifteen-feet, through the low-alluvial terrace in the northeast part of the landfill and adjacent to the Salinas River flood plain zone. The 2-foot aquifer flows to the west and southwest. Flow direction is complicated by tidal effects, seasonal fluctuations in the level of the Salinas River, and by larger term effects related to rainfall and recharge. The aquifer may flow to the north at different times of the year. In general, the Salinas River acts as a recharge area to the underlying 2-foot aquifer. The average hydraulic gradient is 0.003 ft/ft and the average ground water velocity for the aquifer is approximately 2.0 ft/yr.

Hydraulic Connection Between the Perched Aquifer System: A gray clay aquitard about 39 feet thick separates the 2-foot aquifer from the overlying the 35-foot aquifer. In some areas the gray clay has been excavated due to construction activities, or naturally removed by erosion, or depositionally pinches out. In these areas, the water from the 35-foot aquifer is free to move downward and mix with the 2-foot aquifer. Hydraulic interconnection between the shallow ground water and the 180-foot aquifer has not been established.

**BENEFICIAL USES:** Present and anticipated beneficial uses of ground water in the vicinity of the Landfill include: Agriculture supply; municipal and domestic supply; and Industrial use.

The Salinas River is the nearest surface water body to the north of the landfill. The river flows to the west and eventually enters the Pacific Ocean. Present and anticipated beneficial uses of the river include: water contact recreation; non-contact water recreation; wildlife habitat; warm fresh-water habitat; and fish migration.

There are two man-made stormwater percolation ponds at the site. The ponds receive stormwater runoff from non-landfill disposal areas of the landfill.

**LANDFILL SPECIFICS:** The site encompasses 475 acres. The total area used for disposal is 315 acres. The 315-acre landfill area is divided into 11 disposal modules in two major phases. Phase I Modules (Module 1 through 6) are mainly in the low-lying area of the site and Phase II Modules (Module 7 through 11) will be on the upland plateau area and over the top of the Phase I Modules, refer to Attachments D & E of WDR No. 00-013.

Modules 1 & 2 were completed in 1983 and 1990, respectively. Both are unlined landfill areas. Module 1 received its final cover in 1983. The cover met all the Regional Board's final cover regulations in effect at the time of its completion. The cover for Module 2 was completed in 1990 and it consists of a one foot foundation layer; a one foot low permeability soil layer ( $K < 1 \times 10^{-6}$  cm/sec); and a two feet vegetative layer. Module 2's cover meets the intent of closure specifications in Title 27 for continued containment, and ensures the closed unit will not create conditions of pollution or nuisance. The south-facing slope of Module 1 & 2 covers are referred to as "Module 1 & 2 long-term intermediate covers" because the revised Master Plan for Landfill Development (December 1997) plans to construct Phase II modules on top of Phase I modules south-facing slopes.

The wet weather area (WWA), a 10-acre area west of Module 1, is an unlined landfill area. It was used between 1981 and 1986 and has been used during the rainy season since 1997 with the Executive Officer's approval (March 17, 1997). WWA, Module 1 & 2 were constructed before November 27, 1984, and thus are considered "existing landfill units" according to Title 27, §20080 (d). Including the WWA, Module 1 & 2, the Landfill has approximately 50 acres of unlined waste disposal area.

Currently, waste is being disposed in Module 3 and the WWA. Module 3 is a 50-acre module constructed in three phases, in 1988 (12.5 acres), 1990 (12.5 acres), and 1992 (25 acres). It is the first lined landfill module at the Landfill. When the WWA and Module 3 are completed, filling will begin in Module 4. Future modules must all be designed and constructed to meet or exceed minimum standards established in Title 27, §20240 (c), (d), §20260, and §20310 and this Board.

Module 3 contains a composite liner system. The composite liner system consists of, listed from bottom to top: 1) a 1.5 to 2.0 foot thick layer of primary clay liner, with a permeability of  $1 \times 10^{-7}$  centimeters per second (cm/sec) or less; 2) a 60-mil thick high density polyethylene (HDPE) geomembrane liner; and 3) a 2.5 foot thick sand drainage/operations layer, with a minimum permeability of  $1 \times 10^{-3}$  cm/sec. With the engineering construction of the composite liner system, Module 3 meets the prescriptive criteria as defined in Title 27, §20240.

Module 3's LCRS is designed to maintain the leachate head on the liner at 1 foot or less, consistent with EPA Subtitle D criteria. Leachate collection sumps and pipes are sized to handle twice the peak daily leachate quantity collected in the LCRS estimated by the Hydrologic Evaluation of Landfill Performance, Version 3 (HELP-3). After leachate is removed from the sumps, it is discharged to an aboveground storage tank. Leachate is then recirculated back to Module 3 by spraying onto the surface of the intermediate cover soil. Monitoring requirements for the LCRS are detailed in MRP No. 00-103.

A Landfill gas monitoring and control system has been in place in Module 1 & 2 since 1983, in Module 3 since 1994 and in the WWA since 1998. The system collects landfill gas from Module 1, 2, and 3, and the WWA for use as fuel to generate electricity. The system also serves to prevent gas migration. Currently, approximately 1.7 million standard cubic feet of landfill gas are collected daily. The Master Plan for Landfill Gas Monitoring, Collection, and Recovery System, Monterey Peninsula Waste Management Facility (November 1997) documents long-term development and expansion of the Landfill gas collection system.

The modules are filled sequentially. The Landfill is expected to reach its full capacity by the year 2083 or 2090 depending on the refuse to daily soil cover ratio of 4-to-1 or 10-to-1, respectively.

The facility has various buildings for administrative, storage, maintenance, recycling and landfill gas generation purposes. Within the 315-acre landfill area, there is a petroleum contamination soil treatment area and a composting area. The oily liquid waste biocell treatment area, which was located outside the landfill area, was permanently

closed in April 1999.

The Landfill's current groundwater monitoring program contains: 1) fifteen Detection Monitoring Points (DMPs) and three piezometers in the 2-foot aquifer; 2) six DMPs and nine piezometers in the 35-foot aquifer.

#### Compliance History:

The Discharger's geologic data indicates prevention of ground water degradation and protection of beneficial uses can not be assured given the characteristics of native soils that separate the waste management unit from ground water.

A major compliance issue was the former liquid waste land treatment unit (LWLTU). The LWLTU formerly received liquid wastes consisting of liquid sludge from wastewater treatment plants (WWTP), septic tank pumpings, portable (chemical) toilet wastes, and restaurant greases trap pumpings. These wastes were disposed by landspreading on a 200-acre area of sand dune deposits located in the upland plateau area southwest of the existing landfill. After an adjacent regional WWTP became fully operational in 1990, the Landfill's liquid waste spreading operations were largely phased out. Currently, only non-hazardous drilling mud and some other non-hazardous liquid wastes, that meet the 50% moisture requirement, are accepted for landspreading in a designated area of the landfill. Dewatered sludge is used as alternative daily cover, as a soil supplement for the vegetative cover, or disposed in Module 3. Approximately 30,000 wet tons of dewatered sewage sludge is accepted at the Landfill every year. In 1987, ground water monitoring wells, constructed to monitor degradation, sporadically detected volatile organic compounds in the 35-foot aquifer. No degradation was detected in subsequent years.

A Biocell Treatment Unit was constructed in 1995 to replace the former LWLTU for treatment of dilute oily liquid wastes from car wash sumps, automotive repair shop sumps, and parking lot oil/water separators. The biocell was decommissioned in 1999. The biocell was a 200 feet x 32 feet sand filled cell with a double liner and tailwater collection system. Wastewater percolates through the sand and was collected in the tailwater collection system. The collected wastewater was discharged into a sump and a

pump either sprayed the water back onto the surface of the biocell or pumped the water to the nearby WWTP for treatment. When the biocell was full, dewatered oil wastes were removed and disposed of at the Landfill. Approximately 370 tons of dilute oily liquid waste was placed in the biocell yearly. No major violations have been reported related to this operation.

The Discharger currently stores clean segregated concrete and asphalt rubble in a 5-acre upland plateau area of the Landfill called the Concrete/Asphalt Storage and Recycling Area. Periodically a portable crushing plant is brought to the Landfill and is used to crush and screen the materials to produce baserock. The Discharger has used this material for on-site roads and parking lot areas. A local construction company removes the baserock for off-site construction projects. No major violations have been reported related to this operation.

A 10-acre area has been used for composting operations since 1986. The operation will expand to 70 acres in approximately five years. Organic materials, mostly mushroom stumps and stems, as well as wood and yardwaste are composted at the site. No major violations have been reported related to this operation.

Granite Construction Company operates at the Landfill a fenced three-acre area used as a Petroleum Contaminated Soil Recycling Facility. The contaminated soil is placed over an area lined with a 60-mil HDPE geomembrane covered with asphalt pavement. When the amount of contaminated soil reaches a sufficient amount, the contractor incinerates the soil in an on-site incinerator. Incineration removes the petroleum contaminants. The treated soil is used for Landfill cover. Storm water from the site is captured, contained, tested, and, based on analytical results, discharged to a percolation/evaporation area. Granite Construction is ceasing its operations in the year 2000. The area will be taken over by a composting operation. No major violations have been reported related to this operation.

Recent inspections of the Landfill did not note any major violations. The Landfill was awarded the Best Solid Waste Disposal Facility in North America in 1998.

On September 18, 1998, the Discharger adopting Resolution No. 98-8 and 98-9. "A Resolution Establishing Enterprise Fund for Financial Assurance for Closure of the Monterey Peninsula Landfill" and a "Pledge of Revenue Agreement," respectively. This action changes the method of funding from an enterprise fund to a pledge of revenue. The Discharger took these actions to demonstrate availability of financial resources to conduct closure and postclosure maintenance activities in conformance with sections of the California Public Resources Code and CCR Title 27.

The Pledge of Revenue equal \$191,400 per year for 30-years (total of \$5,742,000). The post closure maintenance cost estimate is approximately \$5,700,000. The closure cost estimate is approximately \$9,300,000, assuming a Subtitle D compliant prescriptive final cover. The Discharger is investigating an engineered alternative cover (mono cover) that, if approved by the Regional Board, would reduce the closure cost estimate to approximately \$4,200,000.

**FUTURE PLANS:** The most recent Master Plan for Landfill Development is dated December 1997, and proposes the following:

- Increasing the Landfill's capacity by matching the excavation depth in the upland plateau area to the low-lying terrace area.
- Providing a uniform 100-foot buffer zone along the western perimeter.
- Increasing the Landfill's final grades by joining peaks to create ridges rather than individual mounds of each module.
- Modifying the filling sequence (refer to Attachment B, C & D) by developing the Landfill module in the low-lying terrace area, adjacent to the Salinas River, in a single phase.
- Developing Phase II modules on top of Phase I modules. Therefore, only the exterior side-slopes of Modules 1, 2, 3, and the entire WWA have received or will receive a final cover under the Final Partial Closure and Postclosure Maintenance Plan, EMCON 9/98.

A Preliminary Closure and Postclosure Maintenance Plan was prepared for the entire landfill in September 1998 in accordance with Title 27, §21769, and proposes to use an engineered alternative cover (mono-cover) as final

cover for the entire landfill disposal area. The Regional Board and the California Integrated Waste Management Board (CIWMB) requested the Discharger to conduct a test study to demonstrate the effectiveness of the mono-cover. In January 1999, the Landfill was selected to participate in the nation-wide Alternative Cover Assessment Program. The Program assists landfill owners in evaluating the effectiveness of mono-covers at solid waste landfills. The project is sponsored by the U.S. Environmental Protection Agency Cincinnati Research Lab and implemented by Desert Research Institute at the University of Nevada. The project team will in coordination with the Regional Board and the CIWMB will comment on the Landfill mono-cover test study. The pilot study started in June 2000 and is expected to last approximately five years. The Discharger was also requested to prepare alternative final cover scenarios should the "mono-cover" study not prove effective.

**PROPOSED ORDER CONTENTS:** The proposed WDR consists of:

1. General Information

The section includes discussions of the site's geology and hydrogeology, water quality, the landfill operations, beneficial uses of the water and the surrounding land.

2. Discharge Prohibitions

These discharge prohibitions are applicable to Class III waste disposals.

3. Discharge Specifications

These are specifications that the Discharger must meet and/or implement to comply with Title 27, Division 2, pertaining to solid waste disposal practices. These specifications are categorized into five groups a) General Specifications; b) Wet Weather; c) Design Criteria; d) Closure; and e) Reporting.

- Many of the findings, prohibitions, standards and provisions contained in WDR No. 93-063 have been removed from proposed WDR No. 00-103. The findings that were removed are adequately addressed in this staff report. The prohibitions, standards and provisions

removed are sufficiently addressed in the California and Federal regulations and do not warrant repeating in the WDR, or have been transferred to "Standard Provisions for Waste Discharges Subject to California Code of Regulations Title 27, September 2000."

4. Water Quality Protection Standards

The standards include constituents of concerns, monitoring parameters, concentration limits, monitoring points, point of compliance, and compliance period.

5. Provisions

In general, the provisions mandate Discharger to be responsible for the landfill operations and compliance with this Order and relevant regulations. Discharger is responsible for maintaining records, reporting any changes or problem, characterizing wastes, implementing all monitoring requirements, ensuring quality controls, and submitting and updating reports as required.

**PROPOSED MONITORING AND REPORTING PROGRAM (MRP) CONTENT:**

The proposed MRP consists of:

Part I: Monitoring and Observation Schedule

This section contains requirements for periodic routine inspections of the landfill and its leachate collection systems, waste intake monitoring, and detailed analytical monitoring of groundwater.

Part II: Sample Collection and Analysis

This section establishes criteria for sample collection and analysis, methods to determine concentration limits, and specifies how these records should be maintained.

Part III: Statistical and Non-statistical Analysis of Data

This section establishes acceptable statistical and non-statistical methods the Discharger must use to perform data analysis.

**Part IV: Reporting**

This section establishes formats and requirements that the Discharger must follow when submitting analytical data, and annual reports, corrective action summaries, etc, to the Regional Board.

**Part V: Definition of Terms**

This section defines various terms used in the MRP.

**ENVIRONMENTAL SUMMARY:**

WDR Order No. 00-103 is for an existing facility and is therefore exempt from the provisions of the California Environmental Quality Act (Public Resources Code Section 21000, et seq.) in accordance with Section 15301, Chapter 3, Title 14 of the CCR.

**RESPONSE TO COMMENTS**

Monterey Regional Waste Management District (Discharger), August 27, 1999 letter, refer to Attachment 3.

Staff concurs with the Discharger's comments 1, 2, 4, 5 through 16, 18, 19, 20, 22, 23, 25, 27, 28, 31, 32, 33, 35, 36, 37, 38, 39, 42, 44, 45, 46, 48 through 58. Staff does not concur with the Discharger's comments 3, 17, 21, 24, 26, 28, 29, 30, 34, 38, 34, 38, 40 and 43 for the reasons stated below:

**Comment 3 and 43:** Removing chloride as a monitoring parameter.

**Response:** Based on the most recent monitoring data, Chloride concentrations suggest there is little or no tidal/salt water influences on water quality within the 2-foot aquifer. However, the landfill waste management units have the potential to contribute salts to the 2-foot aquifer.

**Comment 17:** Deleting references to "Subtitle D" (i.e., 40 CFR 258) from the order.

**Response:** State Water Resources Control Board (SWRCB) Resolution No. 93-62 (Resolution No. 93-62), findings 12 and 13 clearly indicate USEPA determined Chapter 15 (subsequently incorporated into Title 27) does not fully comply

(noncompliance elements listed in Appendix I of Resolution No. 93-62) with the federal municipal solid waste regulations.

Apparently, at the time the SWRCB adopted Resolution No. 93-62 insufficient time existed to make the needed changes and come into compliance with the federal regulations, and these changes still have not been made.

Consequently, Provision I.A. of Resolution 93-62 specifically directs the Regional Boards to implement federal municipal solid waste regulations. USEPA's approval of the State program is contingent on satisfying this provision of Resolution No. 93-62 until such time as the above-described changes are made to Title 27. Therefore, citing 40 CFR 258 in this order is consistent with Resolution No. 93-62.

**Comment 21:** Regards Section 20240(c) of Title 27 that requires a five-foot vertical separation between "waste" and the highest anticipated elevation of ground water. The Discharger requests that Discharge Prohibition 10 of the proposed Waste Discharge Requirements acknowledge the Regional Board's past approved exemption from this requirement of Title 27.

**Response:** Acknowledgment is not necessary because the Regional Board did not exempt compliance with the waste to ground water five-foot separation requirement.

In 1990, staff defined "waste" to include "leachate." The issue was, should leachate within the leachate sump be separated from ground water by five-feet? At that time, staff concluded it should, but granted an exemption [per Section 20080(b) of Title 27], conditional on a more restrictive liner design.

Today, staff concludes "waste" and "leachate" are discrete, based on the following. Section 20164 and 20200 of Title 27 do not include leachate in the definition waste. However, it does define "leachate" as formed by the drainage of liquids from waste or by percolation or flow of liquids through waste. This definition in combination with related definitions in Title 27 lead staff to conclude that leachate is discrete from "waste," as it applies to complying with the five-foot separation requirement.

Therefore, the separation distance applies to "waste" from ground water. Leachate, being discrete from waste, is addressed in Title 27 by requiring a collection, removal and recirculation system (e.g., liner, leachate sumps). Consequently, rather than granting an exemption with the intent of relaxing the five-foot separation requirements, the Discharger constructed a more restrictive liner system than the prescriptive standards of Chapter 15, which in 1989 were the applicable regulations.

Ultimately, the Discharger's more restrictive liner system (now the prescribed standard in Title 27) is good for water quality given the shallow depth to ground water beneath portions of this Landfill (e.g., separation between waste and ground water is greater than five-feet, but less than ten-feet).

In conclusion, staff desires to avoid any relaxation of the five-foot separation requirement established in Section 20240(c) of Title 27. Maintaining this requirement is in the best interest of protecting water quality by assuring at least a minimum five-separation distance between waste and the highest elevation of ground water.

In October 1999, the Executive Officer issued a letter to the Discharger acknowledging compliance with the five-foot separation beneath Module III.

**Comment 24:** Clarifies that the regulations for daily cover performance standards are under Title 27 Section 20690 and not Title 14 Section 17683. Also, suggests deleting alternate daily cover as a Regional Board discharge specification because it is addressed by the California CIWMB regulations in Title 27 and enforced by the Local Enforcement Agency, which is Monterey County Health (LEA).

**Response:** Specifically, daily cover performance standards are addressed under Title 27 Section 20695, daily cover under Section 20680 and alternative daily cover under Section 20690.

To the extent that the Regional Board's water quality concerns [i.e., preventing nuisance (e.g., vectors, odors etc) and leachate generation, and reducing stormwater runoff into waste] related to daily cover are addressed, we concur with reducing Regional Board requirements/oversight on daily cover.

But first, we need to clarify the Regional Boards' use of Title 27 regulations promulgated by the CIWMB. Section 20012 of Title 27 specifically allows the Regional Boards to implement CIWMB standards where the Regional Boards deem it necessary to protect water quality, provided that its action does not duplicate or conflict with any action taken by, in this case, the LEA.

Does duplication or conflict exist between the local enforcement agency and the Regional Board over daily cover placement requirements (e.g., six-inches of cover material) and reviewing and approving alternative cover and related performance standards (i.e., daily cover standards other than those prescribed in Title 27)? Regional Board staff concludes the answer is no.

The LEA regulates these issues and is in a better position to assure compliance, but their regulations and enforcement are not necessarily driven by the need to protect water quality. In contrast, Regional Board staff is not in a position to conduct frequent enough inspections to assure daily cover compliance, and only consider giving concurrence with alternative cover design after LEA approval is given. Yet, the Regional Board, by law, is primarily responsible for assuring water quality is protected, and poor landfill daily cover practices can be a source of significant water quality degradation.

Therefore, the Regional Board deems it necessary to maintain partial involvement to assure water quality issues related to daily cover, cited above, are adequately addressed. We propose amending Discharge Specification 5 by requiring that daily cover address the above cited water quality issues, and maintain the Regional Board's involvement in approving alternative daily cover proposals.

**Comment 26:** Limit planting and maintaining vegetation to landfill slopes with intermediate and final cover and remove from this Discharge Specification reference to active working areas.

**Response:** The intent of Discharge Specification 11 is, during period of precipitation, to prevent erosion over the entire landfill site, not just the slopes with intermediate or final cover. The Discharger has a number of lease operations occurring on its property that could cause erosion, this discharge specification is intended to address



these and all disturbed areas located on Discharger's landfill property. Erosion control issues will be further addressed when the Discharger complies with CCR Title 27's requirement to empty storm water storage facilities immediately following each storm in order to return storage capacity.

**Comment 28:** Include language acknowledging a final cover based on a monocover design (i.e., using native soils with sufficient thickness and absorptive capacity to satisfy the prescriptive criteria of Title 27) and stating its approval will be based on a future field demonstration test.

**Response:** The Discharger is too early in the planning and design phase to consider including language in this order regarding the acceptability of a monocover. Also, review the response to the Discharge's comment 34, below.

**Comment 29:** Daily cover and performance standards are primarily CIWMB issues and should not be included in this order.

**Response:** Concur with deleting this provision provided daily cover is operated in a manner that is protective of water quality, as discussed in the response to the Discharger's comment 24.

**Comment 30:** Add reference to "Monitoring Parameters" in Provision 10.

**Response:** Provision 10 has been deleted from the order. The Discharger's ability to request changes to the Monitoring and Reporting Program (MRP) is inherent in the Regional Board's MRP process. The Regional Board at its inception, has authorized its Executive Officer to issue MRP in order to assure timely and responsive monitoring that assures compliance with the Regional Board's discharge requirements. Therefore, this issue is addressed in the MRP and should not be included in the Waste Discharge Requirement.

**Comment 34:** Delete the requirement to submit a closure and postclosure maintenance plan by September 30, 2003, because an earlier plan is still viable.

**Response:** Concur with this comment. This issue also relates to the monocover issue discussed above. Section 21710(a)(4) indicates the

Discharger is to notify the Regional Board of any changes to the plan or any other information submitted under the State Water Resources Control Board promulgated regulations in Title 27. This reinforces Regional Board staff's determination not to include references to final cover based on a monocover design in this order. The monocover proposal would be a change in the plan and would require a new plan submittal.

**Comment 40:** Need to update order Attachments (e.g., well location maps).

**Response:** New attachments have been created.

The Discharger submitted several comments on the revised Monitoring and Reporting Program (MRP). Given the MRP is issued by the Regional Board's Executive Office, the Discharger and Regional Board staff agreed to address these comments separately from this WDR adoption process.

## RECOMMENDATION

Approve the use "Standard Provisions for Waste Discharges Subject to California Code of Regulations Title 27, September 2000."

Adopt proposed Waste Discharge Requirements Order No. 00-103.

## ATTACHMENTS

1. Proposed Waste Discharge Requirements Order No. 00-103
2. Proposed Monitoring and Reporting Program No. 00-103
3. August 27, 1999 Comment Letter from Monterey Regional Waste Management District
4. January 1984 Standard Provisions and Reporting Requirements for Waste Discharge Requirements.

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**STATE OF CALIFORNIA  
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL COAST REGION  
81 Higuera Street, Suite 200  
San Luis Obispo, CA 93401**

**Revised WASTE DISCHARGE REQUIREMENTS ORDER NO. 00-103**

Waste Discharger Identification No. 3270303001

First Draft July 23, 1999, Revision 4

Proposed for Consideration at the November 29, 2000 Meeting

For

**MONTEREY REGIONAL WASTE MANAGEMENT DISTRICT  
MONTEREY PENINSULA CLASS III LANDFILL  
Monterey County**

The California Regional Water Quality Control Board, Central Coast Region (hereafter Regional Board) finds that:

**Site Owner and Location**

1. The Monterey Regional Waste Management District (hereafter "Discharger"), owns and operates the Monterey Peninsula Class III Landfill (hereafter "Landfill"), formerly known as the Marina Class III landfill, refer to Attachment A.
2. The 475-acre Landfill is located in Sections 16, 17, 20, and 21 of Township 14 South, Range 2 East, Mount Diablo Baseline & Meridian, approximately one mile east of State Highway 1, two miles northeast of the City of Marina, and 12 miles northeast of the City of Monterey, refer to Attachment A.

**Purpose of Order**

3. The Discharger is currently regulated by Waste Discharge Requirements Order No. 93-063 (hereafter "Order 93-063"). Purpose of proposed Order No. 00-103 (Hereafter "Order" or "Order No. 00-103") is to revise and update requirements for discharging waste to land at the Landfill. These revisions and updates will bring the Landfill into compliance with California Code of Regulations (CCR) Title 27, Solid Waste, effective July 18, 1997; and, 40 CFR Parts 257 and 258 Solid Waste Facility Disposal Criteria, Final Rule, as promulgated October 9, 1991.

4. Order No. 00-103, adopted on November 29, 2000, replaces Order No. 93-063, adopted on July 9, 1993.
5. Order No. 00-103 does not include many of the prohibitions, specifications, standards and provisions contained in Order No. 93-063, The prohibitions, specifications, standards and provisions that were removed are sufficiently addressed in CCR Title 27 and 40 CFR 257 and 258 and do not warrant repeating in Order No. 00-103, or have been transferred to attached *"Standard Provisions for Waste Discharges to Land Subject to California Code of Regulations Title 27, September 2000."*
6. The Discharger submitted a Report of Waste Discharge (ROWD) on February 13, 1998 to update waste discharge requirements for the Landfill. The update includes a revised landfill buffer zone, revised Final Grading and Drainage Plan, revised Fill Sequence Plan, revised Final Cover Plan, and revised Dewatered Sludge Handling, Beneficial Use, and Disposal Procedures

**Site/Facility Description**

7. The final grade and drainage plan is shown on Attachment B. The excavation and base preparation plan is shown on Attachment C. The fill-sequencing plan is shown on Attachment D. Attachment E (pages 1 and 2 of 2) show cross

sections of the fill sequences. Details on the landfills composite liner, leachate collection and storm drain system are shown on Attachments F (pages 1 and 2 of 2).

8. The Landfill will be developed in a total of 11 waste disposal modules (Module 1 – Module 11) in accordance with the December 1997 revised Master Plan for Landfill Development. Full development includes sequential utilization of 11 modules and the Wet Weather Area (WWA) in two phases. Phase I (Module 1 – 6) will raise the low-lying terrace area to an intermediate elevation of approximately 120 feet above MSL. Phase II (Module 7 – 11) consists of landfilling in the upland plateau as well as over the top of Phase I modules. Phase I operation is expected to complete by year 2032. See Attachments D & E.
9. The total potential disposal area, including all active and future areas, is limited to 315 acres of the 475-acre site. Assuming a 4-to-1 refuse to daily soil cover ratio, the Landfill will operate until 2083 with a remaining landfill capacity of approximately 41.0 millions cubic yards (28.7 millions tons). Assuming a 10-to-1 refuse to daily soil cover ratio, the Landfill will operate until 2090 with a remaining landfill capacity of approximately 47.0 millions cubic yards (32.9 millions tons).

### Geology

10. The Landfill is located on the southwestern margin of the Salinas Valley. The original elevation of the Landfill parcel ranged from 10 feet above mean sea level (MSL) in the Salinas River floodplain to 145 feet above MSL in the upland plateau. Northwest-southeast oriented bluffs divide the site into two distinct topographic areas: a northeastern low alluvial terrace adjacent to the Salinas River and a southwestern upland plateau. Approximately 200 acres of the Landfill are alluvial terrace adjacent to the Salinas River, 10 – 20 feet above MSL. The remaining 275 acres are gently rolling upland sand dune deposits ranging in elevation from 10 to 145 feet above MSL. The peak elevation of the Landfill at closure will be 260 feet above MSL.

11. The landfill lies within the Lower Salinas Valley hydrologic Area of the Salinas River Hydrologic Unit, refer to Attachment A. Refuse disposal areas encroach within the 100-year flood plain of the Salinas River. However, construction of a clay levee has redefined the 100-year flood plain so that now no area of the Landfill lies within the redefined 100-year flood plain, thus preventing inundation and washout of solid waste and preventing a hazard to human health and the environment.

### Surface and Ground Water

12. There are four aquifer systems at the landfill site: a) an unconfined aquifer system consisting of three shallow aquifers: the 2-foot, the 35-foot and the 80-foot aquifers; b) the 180-foot aquifer; c) the 400-foot aquifer; and d) the 900-foot aquifer.
13. There are two on-site stormwater retention ponds at the Landfill. The temporary stormwater retention pond is located to the south of Module 3, Phase II. It receives interim interior site runoff and groundwater seepage from the 35-foot aquifer underlying the upland plateau. Water from this pond is pumped to a drainage ditch, which flows to the Salinas River. The permanent stormwater percolation pond is located to the north of the on-site structures. It receives all runoff from the non-landfill portion of the site, including site buildings, paved roads, and parking areas. During heavy rainfall, overflow from the permanent percolation pond is diverted to detection monitoring point SDA-1. Monitoring requirements for the percolation ponds are detailed in the Stormwater Pollution Prevention Plan (revised February 2000) and Monitoring and Reporting Program. Analytical results are reported in the semiannual and annual monitoring reports.
14. There are four water supply wells (one drinking well and three irrigation wells) on site.

### Basin Plan

15. The Water Quality Control Plan, Central Coast Basin (Basin Plan), was adopted by the

Regional Board on September 8, 1994, and approved by the State Water Resources Control Board (SWRCB) on November 17, 1994. The Basin Plan incorporates statewide plans and policies by reference and contains a strategy for protecting beneficial uses of State Waters. This Order implements the water quality objectives stated in that Plan.

16. The Basin Plan (1994) identifies the following present and anticipated beneficial uses of the Salinas River in the Landfill vicinity:
  - a. Municipal and Domestic Supply;
  - b. Agricultural Supply;
  - c. Non-contact water recreation;
  - d. Wildlife habitat;
  - e. Cold and warm fresh-water aquatic habitats;
  - f. Fish migration;
  - g. Fresh water supply to other surface water bodies; and,
  - h. Commercial and sport fishing.
17. Present and anticipated beneficial uses of ground water in the Landfill vicinity include:
  - a. Agricultural supply;
  - b. Municipal and domestic supply; and
  - c. Industrial use.

### California Environmental Quality Act

18. Monterey County completed an Initial Study and Negative Declaration for the Module III expansion area in accordance with the California Environmental Quality Act (Public Resources Code, Section 21000, et seq.) and the California Code of Regulations. The County determined that all potentially significant adverse effects can be avoided through implementation of mitigation measures. Mitigation measures to prevent nuisance and assure protection of beneficial uses of surface and ground waters will be implemented through this WDR.
19. This Order contains prohibitions, discharge specifications, water quality protection standards, and provisions intended to protect the environment by mitigating or avoiding impacts of the project on water quality. This Order is for an existing facility and therefore is exempt from provisions of the California

Environmental Quality Act (Public Resources Code, §21000, et seq.) in accordance with Title 14, Chapter 3, §15301.

### General Findings

20. On October 8, 1993, the Regional Board adopted Order No. 93-84 "Waste Discharge Requirements Amendment for All MSW Landfills in the Central Coast Region, to Implement State Water Board Resolution No. 93-62, Adopted June 17, 1993, as State Policy for Water Quality Control Under Section 13140 of the Water Code." The Monterey Peninsula Class III Landfill is included as one of the municipal solid waste landfills subject to Order No. 93-84.
21. The Landfill is included in the Monterey County Solid Waste Management Plan, prepared by the County Environmental Health Division, 1989, and the Monterey County General Plan. The Landfill operates under Solid Waste Facilities Permit No. 27-AA-0010, issued by Monterey County Department of Health in June 4, 1999.
22. On September 18, 1998, the Discharger demonstrated availability of financial resources to conduct closure and postclosure maintenance activities by adopting Resolution No. 98-8 "A Resolution Establishing Enterprise Fund for Financial Assurance for Closure of the Monterey Peninsula Landfill" and a "Pledge of Revenue Agreement" in conformance with sections of the California Public Resources Code and CCR Title 27.
23. On May 12, 1997, the Discharger submitted its Notice of Intent seeking coverage under the SWRCB's industrial activities storm water general permit.
24. Discharge of waste is a privilege, not a right, and authorization to discharge waste is conditioned upon the Discharger complying with provisions of Division 7 of the California Water Code and with any more stringent limitations necessary to implement the Basin Plan, to protect beneficial uses, and to prevent nuisance. Compliance with this Order should assure conditions are met and mitigate any

potential changes in water quality due to the project.

25. The Landfill meets the criteria of the California Code of Regulations (CCR) as stated in Title 27 and 40 CFR Parts 257 and 258 for a Class III landfill suitable to receive non-hazardous solid wastes. This Order implements the prescriptive standards and performance goals of CCR Title 27, as adopted by the State Water Resources Control Board on July 18, 1997.
26. On October 23, 2000, the Regional Board notified the Discharger and interested agencies and persons of its intention to update the waste discharge requirements for the discharge and has provided them with a copy of the proposed Order and an opportunity to submit written views and comments.
27. After considering all comments pertaining to this discharge during a public hearing on November 29, 2000 this Order was found consistent with the above findings.

**IT IS HEREBY ORDERED** pursuant to authority in §13263 of the California Water Code, the Monterey Regional Waste Management District, its agents, successors, and assigns may discharge wastes at the Monterey Peninsula Class III Landfill, providing compliance is maintained with the following:

#### **A. COMPLIANCE WITH OTHER REGULATIONS, ORDERS AND STANDARD PROVISIONS**

1. Discharge of waste shall comply with this Regional Board's Order No. 93-84 "Waste Discharge Requirements Amendment for All MSW Landfills in the Central Coast Region, to Implement State Water Board Resolution No. 93-62, Adopted June 17, 1993, as State Policy for Water Quality Control Under Section 13140 of the Water Code."
2. Discharge of waste shall comply with all applicable requirements contained in the California Code of Regulations Title 27, Division 2 Solid Waste and 40 CFR Parts 257 and 258 Solid Waste Facility Disposal Criteria. If any applicable regulation requirements overlap

or conflict in any manner, the most water quality protective requirement shall govern in all cases, unless specifically stated otherwise in this Order, or as directed by the Executive Officer.

3. Discharge of waste shall comply with other prohibitions, specifications, standards, provisions, conditions, definitions, and the method of determining compliance contained in the attached "*Standard Provisions for Waste Discharges to Land Subject to California Code of Regulations Title 27, September 2000,*" (hereafter "Standard Provisions").

#### **B. PROHIBITIONS**

1. Discharge of waste to areas outside the limit of the landfill as identified in Attachment B & C is prohibited.
2. Discharge of wastes within the currently permitted Landfill area limits, refer to Attachment B & C, where refuse placement has not occurred, is prohibited; unless a composite liner system, as described in Discharge Specification C.4, is provided.

#### **C. SPECIFICATIONS**

1. Discharge of waste shall not cause the release of pollutants/contaminants, or waste constituents in a manner which could cause a condition of pollution or contamination to occur, as indicated by the most appropriate statistical [or non-statistical] data analysis method and retest method listed in MRP No. 00-103.
2. Discharge, collection and treatment of waste shall not create nuisance, as defined by California Water Code Section 13050(m).
3. On June 26, 1997, the Executive Officer approved the use of dewatered municipal wastewater treatment plant sludge in the vegetative soil cover at the Landfill and shall continue at the digression of the Executive Officer.
4. Wastes shall not be discharged to areas outside the footprint area which had not received waste as of April 9, 1994, unless the discharge

is to an area equipped with a containment system, as follows:

- a. A composite liner and a leachate collection and removal system. The liner must consist of the following components:
  1. Lower Component: a minimum two-foot layer of compacted soil with a hydraulic conductivity of no more than  $1 \times 10^{-7}$  cm/sec (0.1 feet/year); and,
  2. Upper Component: a minimum 40-mils synthetic flexible membrane liner (FML) or a minimum 60-mils high-density polyethylene (HDPE). The upper component must be installed in direct and uniform contact with the lower component; or,
  3. An engineered alternative design. Engineered alternative designs must satisfy the performance criteria in 40 CFR § 258.40(a)(1) and (c), and satisfy the criteria for an engineered alternative to the above Prescriptive Design, as provided by CCR Title 27 § 20080 (b), where the performance of the alternative composite liners' components, in combination, equal or exceed the waste containment capability of the Prescriptive Design.

#### D. WATER QUALITY

##### 2. PROTECTION STANDARDS

1. Discharge of waste shall not cause the concentration of any Constituents of Concern (COC) or Monitoring Parameter to exceed its respective background value in any monitored media (i.e. soil, or groundwater) at any Monitoring Point pursuant to the Monitoring and Reporting Program No. 00-103 (hereafter MRP No. 00-103).
2. Constituents Of Concern (hereafter COC) for ground water and surface water are listed in MRP No. 00-103.
3. Monitoring Parameters for ground water and surface water are listed in MRP No. 00-103.
4. The estimated compliance period, pursuant to CCR Title 27 § 20410, for the Landfill is to the year 2120.

#### E. PROVISIONS

1. Order No. 93-063 "Waste Discharge Requirements for Monterey Peninsula Landfill", adopted by the Regional Board on July 9, 1993, is hereby rescinded.
2. By October 22, 2004, the Discharger must submit a technical report to the Executive Officer, which:
  - a. Discusses whether there has been or will be changes in the continuity, character, location, or volume of the waste being discharged;
  - b. Discusses any proposed expansions (lateral and/or vertical expansions within and/or outside currently permitted Landfill boundaries) or closure plans, including detailed information of the quality and quantity of waste discharged and the anticipated impact upon water quality and Landfill operations;
  - c. Discusses whether, in their opinion, there is any portion of the Order that is incorrect, obsolete, or otherwise in need of revision; and,
  - d. Includes any other technical documents needed to demonstrate continued compliance with this Order and all pertinent State and Federal requirements.
3. The Discharger shall submit an updated/revised version of its Master Plan by December 31, 2002. The Master Plan must include detailed information regarding regulatory considerations; design, construction and operating provisions; environmental monitoring; and closure and postclosure. Additionally, the Master Plan shall:
  - a. Include a Fill Sequencing Plan, including detailed maps. The Fill Sequencing Plan should describe in detail the overall development of the entire Landfill.
  - b. Include a detailed description of the lateral and vertical extent of refuse within all existing Modules. It must include an accurate estimate of waste volumes within each existing Landfill module and an approximation of the remaining volume

and years of capacity for each existing module and all new proposed modules within currently permitted Landfill boundaries. It must also describe all existing available space within currently permitted Landfill areas (i.e., modules where refuse has been placed in the past, but have not reached final permitted elevation and modules or portions of modules where refuse has never been placed).

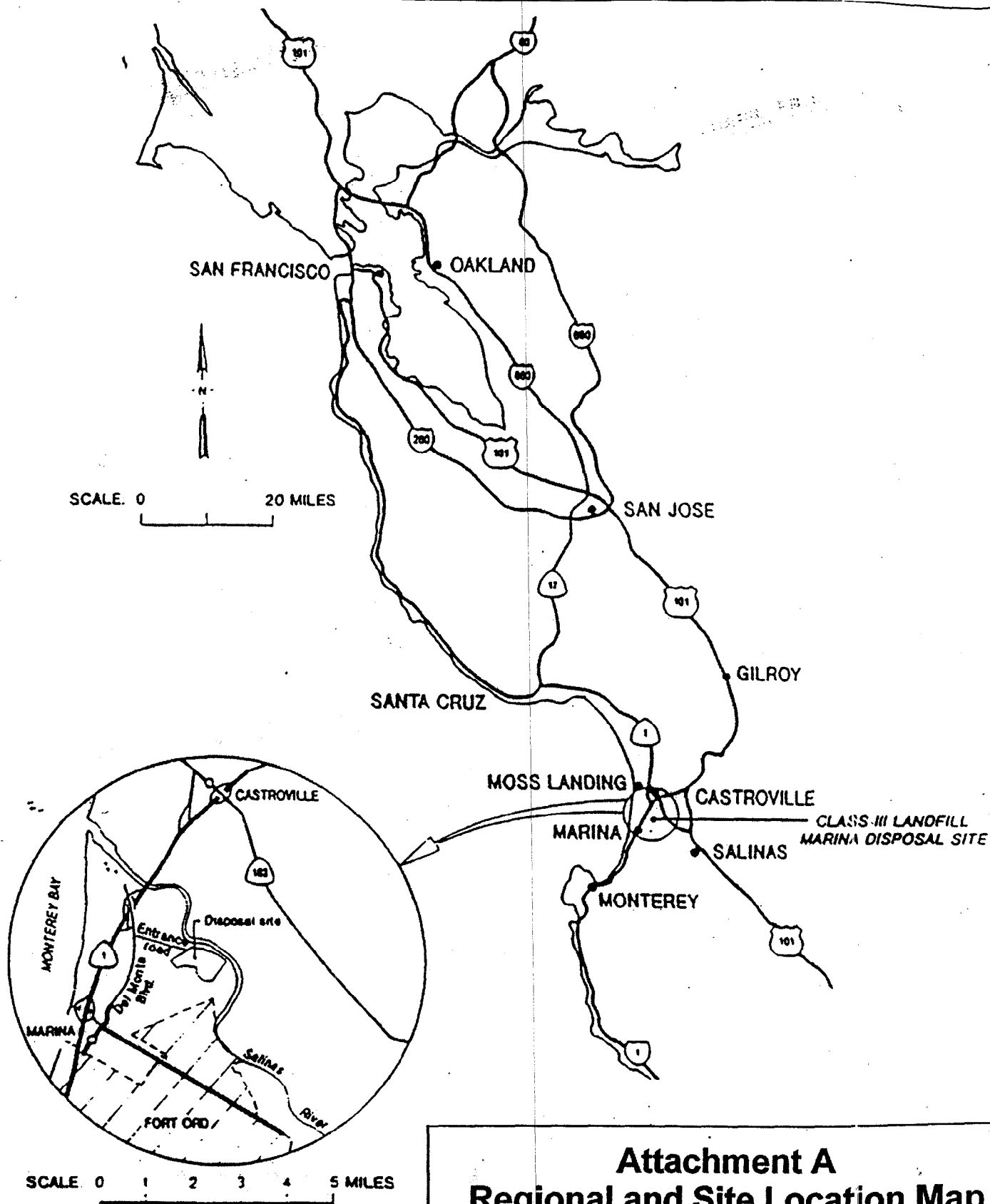
- c. Discuss any plans/proposals to close or partially close any modules or portions of modules, any proposed liner systems and respective design components, any proposed plans for long-term intermediate cover for Landfill areas which may remain inactive for long periods of time.
4. On August 21, 1992, the Discharger adopted Resolution No. 92-7, Financial Assurance for Corrective Action for the Landfill, which has been rescinded. On September 18, 1998, the Discharger adopting Resolution No. 98-8 and

98-9 "A Resolution Establishing Enterprise Fund for Financial Assurance for Closure of the Monterey Peninsula Landfill" and a "Pledge of Revenue Agreement," respectively. The Discharger shall submit a Financial Assurance Report every five years that either validates the Instrument's ongoing viability or proposes and substantiates any needed changes. The next report is due October 22, 2004 and every five years thereafter.

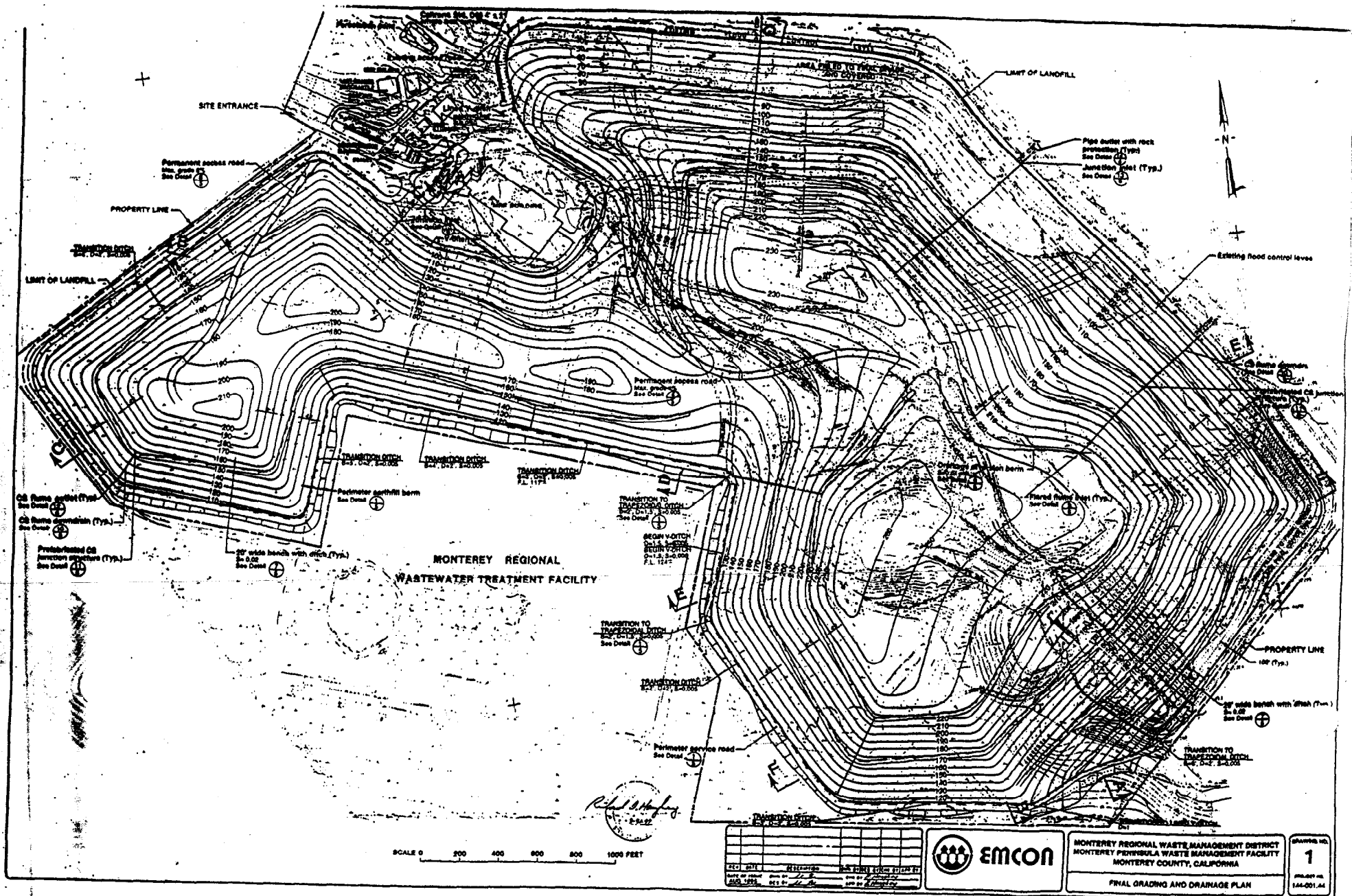
5. By January 31 of every year, the Discharger shall submit a Compliance Report addressing compliance with all terms of this Order. The report can be included in the Landfill's Annual Report to the Executive Officer.
6. The Regional Board will review this Order periodically and may revise its requirements when necessary.
7. The Discharger shall comply with the following submittal and implementation schedule for all tasks and/or reports required by this Order:

#### REPORT AND IMPLEMENTATION DATE SUMMARY

<u>TASK</u>	<u>IMPLEMENTATION DATE</u>
Runoff diversion and erosion prevention [Standard Provision No. C.11]	October 1, of each year
Minimum of a one foot cover over entire active Waste Management Unit [Standard Provision No. C.12]	October 1, of each year
Vegetation placement over entire Landfill area [Standard Provision No. C.14]	October 1, of each year
<u>REPORT</u>	<u>DUE DATE</u>
Wet Weather Preparedness Report [Standard Provision No. F.5]	October 1, of each year
Technical Report [Provision No. E.2]	October 22, 2004
Updated Master Plan [Provision No. E.3]	December 31, 2002
Financial Assurance Report [Provision No. E.4]	October 22, 2004
Compliance Report [Provision No. E.5]	January 31, of each year

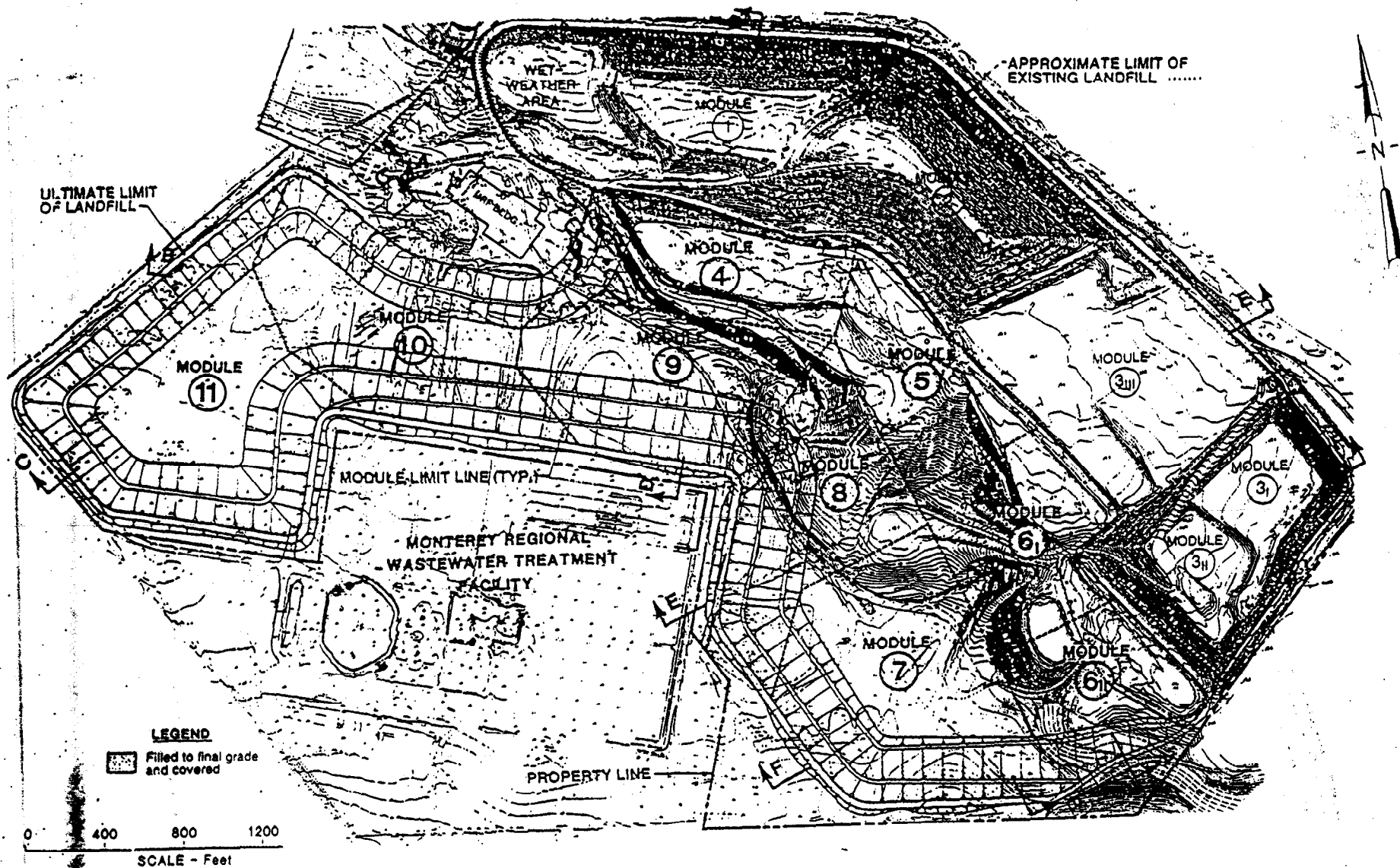




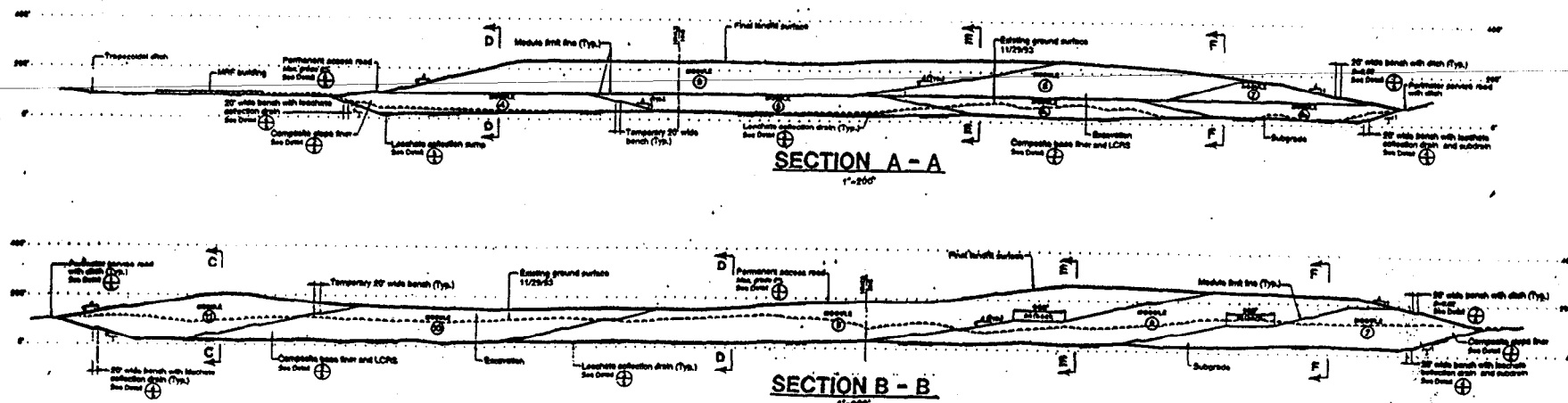
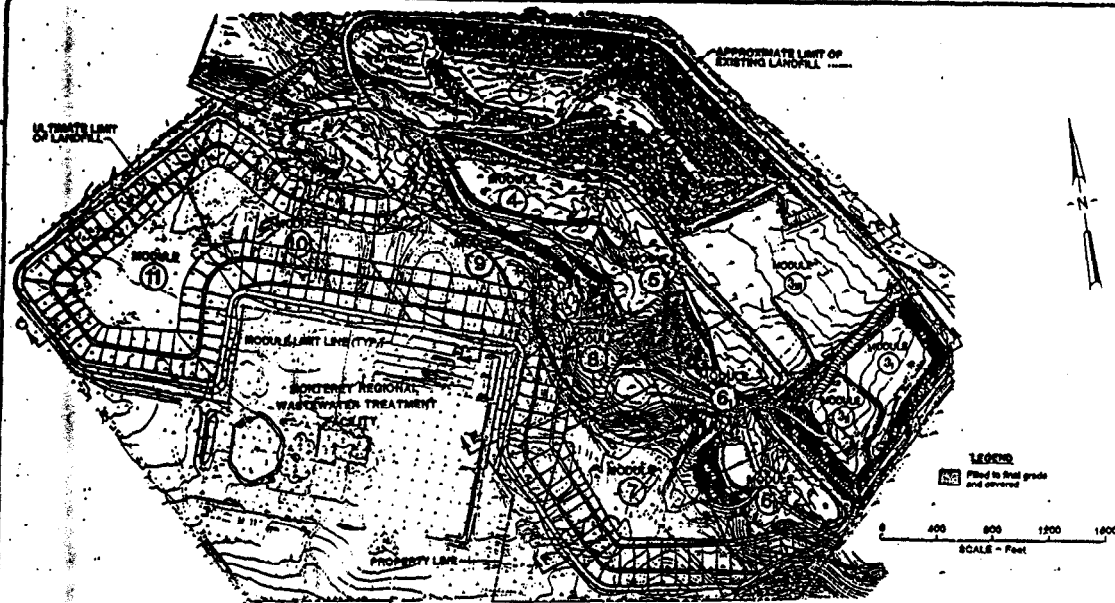


**ATTACHMENT B**  
**Final Grading and Drainage Plan**





**ATTACHMENT D**  
Fill Sequence Plan



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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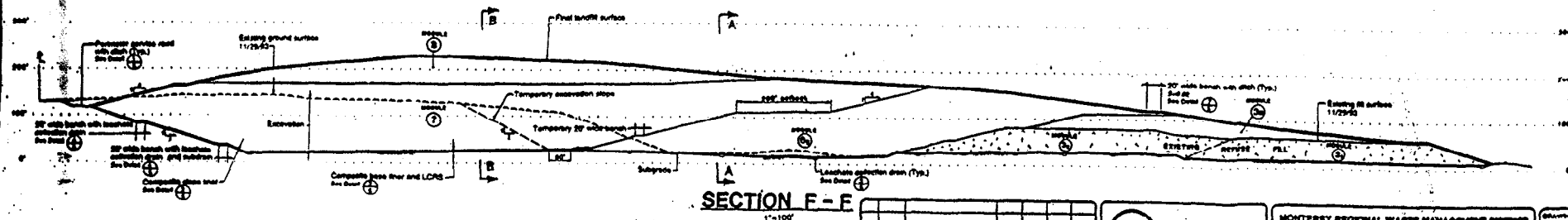
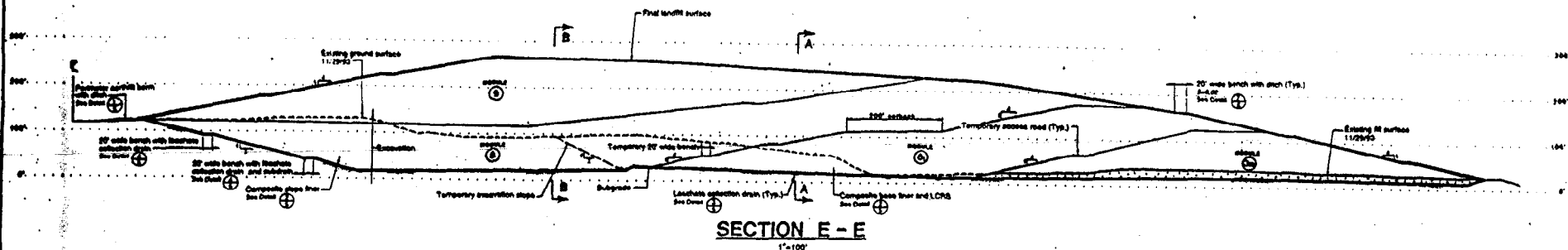
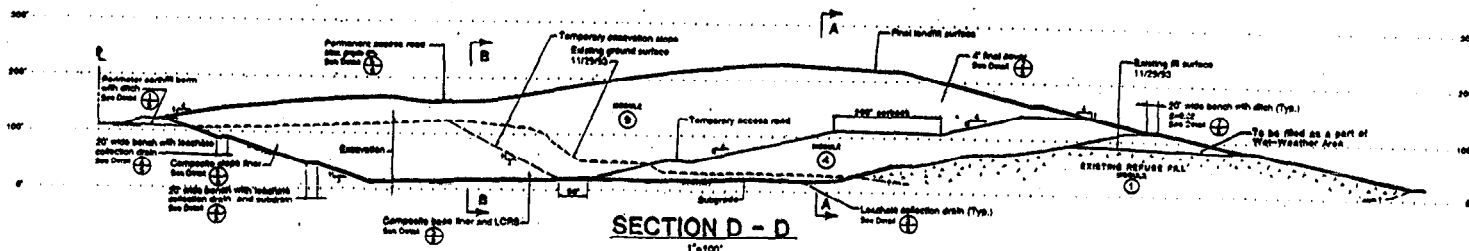
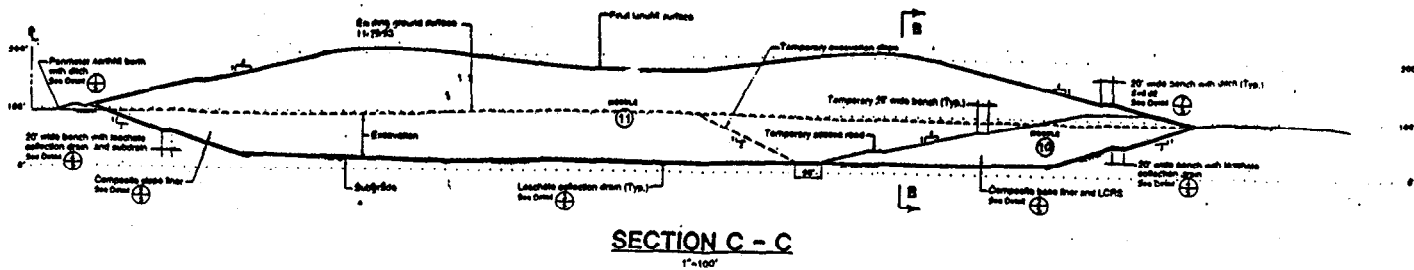


MONTEREY REGIONAL WASTE MANAGEMENT DISTRICT  
MONTEREY PENINSULA WASTE MANAGEMENT FACILITY  
MONTEREY COUNTY, CALIFORNIA

FILL SEQUENCE PLAN AND SECTIONS SHEET 1 OF 2

3

ATTACHMENT E (1 of 2)  
Fill Sequence Cross Sections



*Richard D. Hapley*  
11/29/93

DATE	BY	REVISION
11/29/93	RDH	1.0
12/1/93	RDH	2.0
12/1/93	RDH	3.0
12/1/93	RDH	4.0
12/1/93	RDH	5.0
12/1/93	RDH	6.0
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12/1/93	RDH	9.0
12/1/93	RDH	10.0

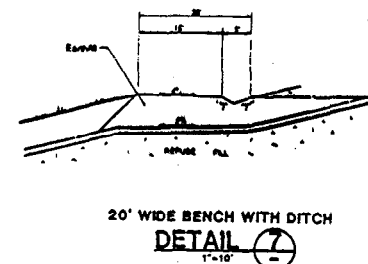
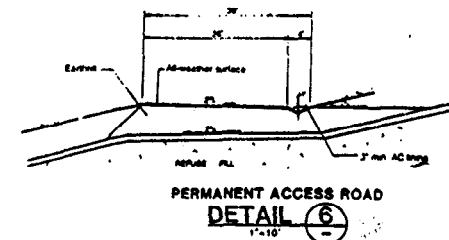
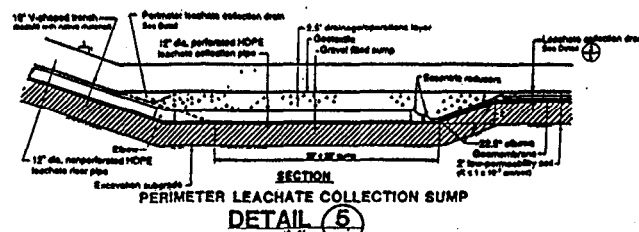
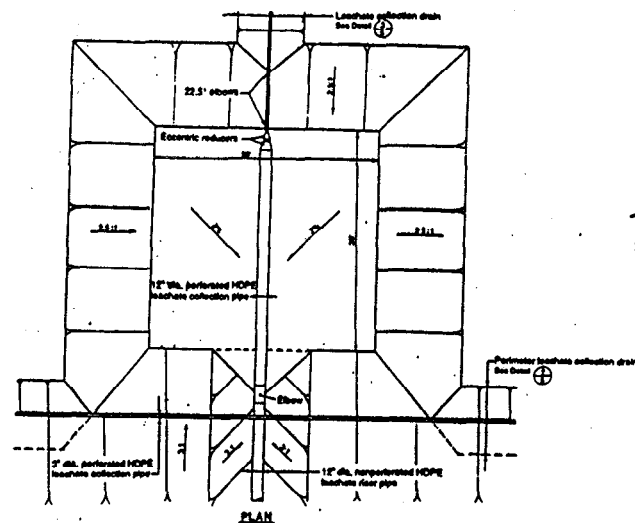
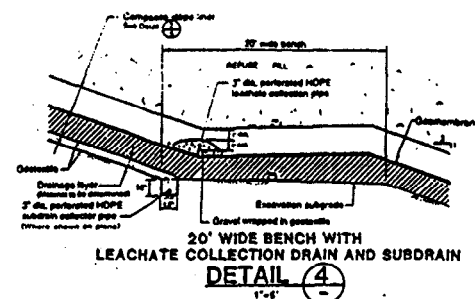
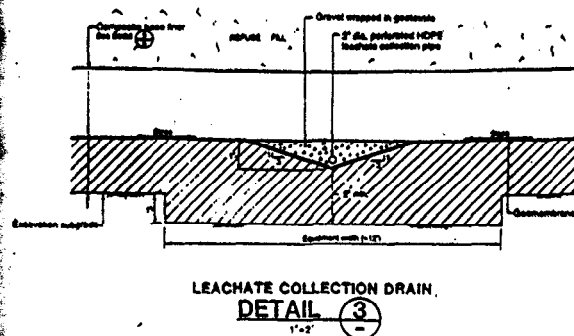
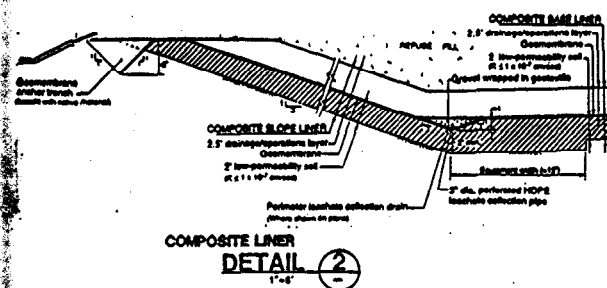
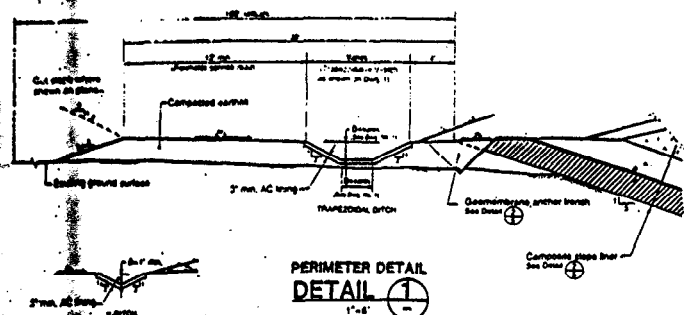


MONTEREY REGIONAL WASTE MANAGEMENT DISTRICT  
MONTEREY PENINSULA WASTE MANAGEMENT FACILITY  
MONTEREY COUNTY, CALIFORNIA

FILL SEQUENCE SECTIONS SHEET 2 OF 2

4  
PROJECT NO.  
144-001-04

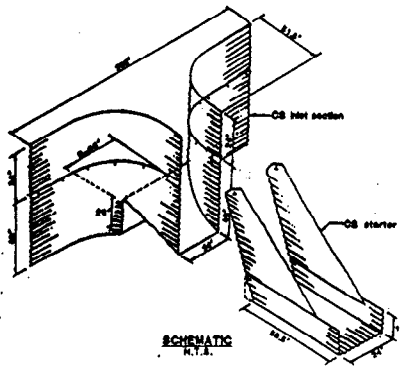
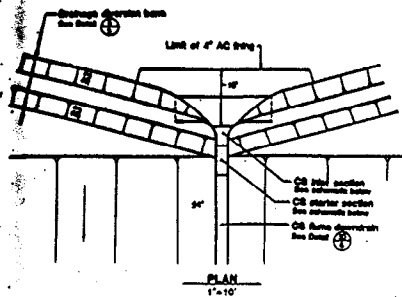
# ATTACHMENT E (2 of 2) Fill Sequence Cross Sections

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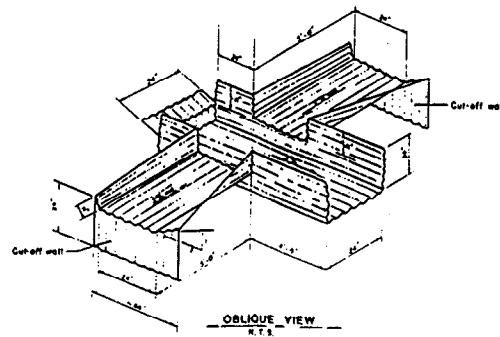
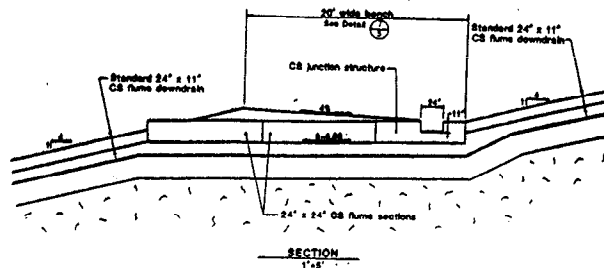
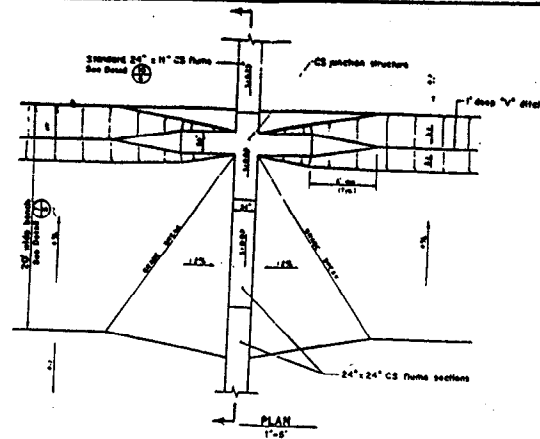
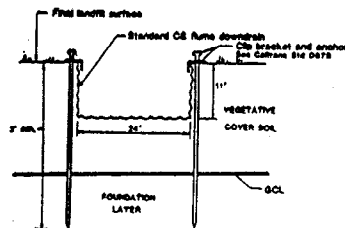
MONTEREY REGIONAL WASTE MANAGEMENT DISTRICT  
MONTEREY PENINSULA WASTE MANAGEMENT FACILITY  
MONTEREY COUNTY, CALIFORNIA

DETAILS 2001 1 1 1

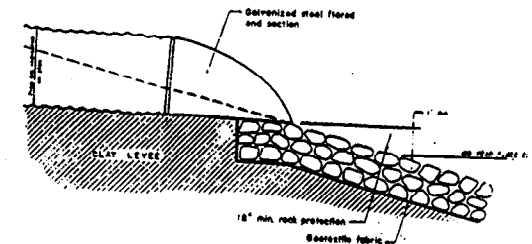
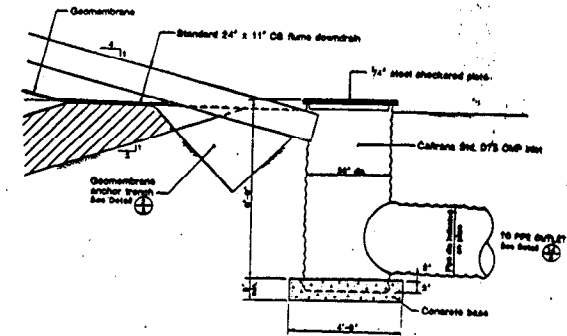
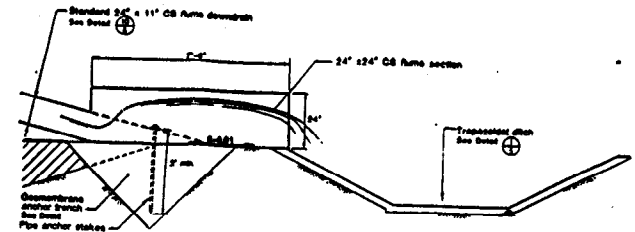
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FLARED FLUME INLET  
DETAIL 9



CS JUNCTION STRUCTURE  
DETAIL 11



NO.	DATE	DESCRIPTION	DESIGNED BY	CHECKED BY	DATE
1	10/20/07	DESIGN	J. J. J.	J. J. J.	10/20/07
2	10/20/07	REVISED	J. J. J.	J. J. J.	10/20/07



MONTEREY REGIONAL WASTE MANAGEMENT DISTRICT  
MONTEREY PENINSULA WASTE MANAGEMENT FACILITY  
MONTEREY COUNTY, CALIFORNIA

DRAWING NO.  
6  
PROJECT NO.  
144-001.41

DETAILS Sheet 2 of 2

**STATE OF CALIFORNIA  
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL COAST REGION  
81 Higuera Street, Suite 200  
San Luis Obispo, CA 93401**

**MONITORING AND REPORTING PROGRAM NO. 00-103  
Waste Discharger Identification No. 3270303001  
First Draft July 23, 1999, Revision 4  
Proposed for Consideration at the November 29, 2000 Meeting**

**FOR  
MONTEREY WASTE MANAGEMENT DISTRICT  
MONTEREY PENINSULA CLASS III LANDFILL  
Monterey County  
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    - 1. Parameter Monitoring**
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- A. STATISTICAL ANALYSIS**
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**C. RE-TEST PROCEDURE****PART IV - REPORTING****A. MONITORING REPORT**

1. Letter of Transmittal
2. Compliance Summary
3. Graphical Presentation of Analytical Data
4. Corrective Action Summary
5. Laboratory Results
6. Sampling Summary
7. Standard Observations
8. Maps

**B. ANNUAL SUMMARY REPORT**

1. Discussion
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(VOC COMPOSITE)

**PART I: MONITORING AND OBSERVATION SCHEDULE**

Unless otherwise indicated, all monitoring and observations shall be reported as outlined in Part IV.

**A. SITE INSPECTIONS**

The Discharger shall inspect the Landfill site, in accordance with the following schedule, and record at a minimum, the **Standard Observations** as defined in Part V.

Site Inspection Schedule:

1. During the wet season (October through April), following each storm that produces storm water runoff and discharge, with inspections performed at least monthly.
2. During the dry season, a minimum one inspection each **three month period**.

**B. INTAKE MONITORING**

The Discharger shall maintain a daily record of the waste stream. The record shall include the following:

1. Weight (in tons) of waste received;
2. Running totals of tons received, tons remaining for waste placement, and remaining site life expectancy (in years);
3. Current fill area (in acres);
4. Waste type and diversion quantities; and
5. Log of random load checking program. The log shall contain a record of refused loads, including the type of waste refused, and the date, name, address, and phone number of the party attempting to dispose of the waste.

The intake daily records are not to be submitted to this Regional Board, but are to be maintained at the Discharger's offices in accordance with Part IV. C. of this monitoring and reporting program, and are to be made available to Regional Board staff upon request to review and/or copy.

**C. LEACHATE AND DRAINAGE SYSTEMS INSPECTIONS**

The Discharger shall inspect all leachate collection and treatment systems and record the following information:

1. **Bi-weekly** - leachate containment and collection system integrity, surface water collection and drainage system integrity, record volume of leachate collected (in gallons) and disposal method used;
2. **Monthly** - pumping system operational check; and

3. **Annually** – Leachate collection and removal system testing and demonstration, as required by Title 27 §20340(d), results as part of the Annual Summary Report required by this MRP, Part IV.B. Results of annual testing shall be developed in a manner that makes one year's test comparable to previous and subsequent test. The absence or presence of biofouling shall be specifically addressed in the inspection report.

Additionally, the Discharger shall inspect all drainage control systems following each runoff-producing storm event and record the following information:

- a. Whether stormwater storage basins and drainage ditches contain liquids;
- b. Any apparent seepage from the storage basins;
- c. General conditions of the stormwater facilities; and
- d. Steps taken to correct any problems found during inspection and date(s) when corrective action was taken.

#### **D. RAINFALL DATA**

The Discharger shall record the following information:

1. Total precipitation, in inches, during each **three month period**;
2. Precipitation, in inches, during the most intense twenty-four hour interval of each **three month period**; and

#### **E. ANALYTICAL MONITORING**

The Discharger shall monitor the Landfill in accordance with the following schedule(s). Monitoring locations are shown on **Attachment A** of this order. Discharger shall comply with the sampling, analyses, and reporting requirements discussed in Part II, III, and IV of this monitoring and reporting program. Semi-annual monitoring will be performed **each September and March**.

##### **1. Monitoring Parameters**

The Discharger shall analyze all samples from all groundwater Monitoring Points at the Landfill for the Monitoring Parameters listed in **Table 1**. These monitoring parameters meet the requirements of the State Water Resources Control Board Resolution No. 93-62 and 40 CFR Part 258.54.

Table 1. Monitoring Parameters

Parameter	USEPA Method	Units
Chloride	9252	mg/l
Dissolved Oxygen	Field	mg/l
Electrical Conductivity	Field	µmhos/cm
Eh	Field	Millivolts
Manganese (dissolved)	6010	mg/l
Nitrate Nitrogen	9200	mg/l
PH	Field	Units
Sodium (dissolved)	6010	mg/l
Sulfate	9038	mg/l
Temperature	Field	°F/C
Total Dissolved Solids	160.1	mg/l
Turbidity	Field	NTU
VOC <sub>water</sub> <sup>(1)</sup>	8260	µg/l

(1) The VOC<sub>water</sub> Monitoring Parameter includes all Volatile Organic Compounds (VOCs) detectable using USEPA Method 8260, including at least all 47 organic constituents listed in Appendix I to 40 CFR, 258 (Subtitle D), and all unidentified peaks.

## 2. Description and General Location of Ground Water Monitoring Wells

### a. Two-foot Aquifer

This aquifer underlies the Landfills' "lowland area" and is the first encountered ground water beneath the landfills municipal refuse. There are fifteen "Detection" Monitoring Points (DMPs). DMPs G-2, G-21, G-22, G-23, and G-32 shall serve as Point of Compliance wells along the northern edge of the site. DMPs G-35, G-37, G-38, G-39, and G-40 shall serve as Point of Compliance wells along the southern, western, and eastern margins of the wet weather area (WWA), Modules 1, 2, 3 and 4. The latter monitoring points will serve to account for temporal variations in ground water flow. The Two-foot aquifer also underlies the WWA where. In the unlined WWA where the Discharger disposed refuse (since 1997), ground water is monitored using DMPs G-1, G-17, G-33, G-34, and Monitoring Point SDA-1.

In addition to the fifteen DMPs discussed above, Piezometers wells G-3, G-4, and G-30 are used to monitor ground water levels and determine horizontal gradients within the Two-foot aquifer. These measurements are performed semi-annually.

### b. 35-foot Aquifer

This aquifer underlies the Landfills' "upland plateau" and is the first encountered ground water beneath the former Liquid Waste Land Treatment Unit area. Operation of the liquid-waste land treatment unit has been minimized since 1995. The "Detection" Monitoring Points shall be Point of Compliance Wells G-7, G-9, G-11, G-27, G-28, and G-29. The

Board approved the Discharger's proposal to eliminate these six wells from the annual monitoring requirements in December 1998. In addition, no monitoring parameter was detected at above the concentration limits in any of the wells since 1988. These six DMPs are only subject to the COC monitoring requirements every five years (see Part I.E.2). In addition to the six DMPs discussed above, Nine piezometers G-6, G-8, G-12, G-13, G-15, G-16, G-24, G-25, and G-26, , will be used to monitor ground water levels semi-annually to determine horizontal gradients within the 35-foot aquifer

c. **Monitoring Frequency**

Beginning on September 15, 2000, sampling and analyses of all Monitoring Points shall be conducted at least once during each Monitoring Period listed in Table 2.

3. **Constituents Of Concern Monitoring**

Constituents of Concern (COC) are listed in Table 3, and either directly includes or includes by reference all constituents list in Appendix I in 40 CFR, Part 258. Monitoring for COCs shall encompass only those which are not also served as Monitoring Parameters (Table 1). Analysis of COCs shall be carried out **once every five years** at each of the site's groundwater monitoring points. If there is an indication of release (Part IV.C.4) monitoring is also required. The COC monitoring shall be carried out in the spring of one year and the fall of the fifth year. Wells that have not previously been sampled for COCs shall be sampled and analyzed for all COCs within three months of this program becoming effective.

Table 2.

Monitoring Points and Monitoring Periods

Monitoring Points		Monitoring Purpose			Monitoring Periods		
Well ID	GW Medium	Monitoring Parameters	Water Levels	COCs <sup>a</sup>	Quarter	Semi-annual <sup>d</sup>	Five Year
G-2	2 ft aquifer	X		X		X	X
G-21	2 ft aquifer	X		X		X	X
G-22	2 ft aquifer	X		X		X	X
G-23	2 ft aquifer	X		X		X	X
G-32	2 ft aquifer	X		X		X	X
G-35	2 ft aquifer	X		X		X	X
G-37	2 ft aquifer	X		X		X	X
G-38	2 ft aquifer	X		X		X	X
G-39	2 ft aquifer	X		X		X	X
G-40	2 ft aquifer	X		X		X	X
G-1	2 ft aquifer	X		X	X		X
G-17	2 ft aquifer	X		X	X		X
G-33	2 ft aquifer	X		X	X		X
G-34	2 ft aquifer	X		X	X		X
SDA-1 <sup>b</sup>		X		X	X		X
G-3 <sup>c</sup>	2 ft aquifer		X			X	X
G-4 <sup>c</sup>	2 ft aquifer		X			X	X
G-30 <sup>c</sup>	2 ft aquifer		X			X	X
G-7	35 ft aquifer	X		X			X
G-9	35 ft aquifer	X		X			X
G-11	35 ft aquifer	X		X			X
G-27	35 ft aquifer	X		X			X
G-28	35 ft aquifer	X		X			X
G-29	35 ft aquifer	X		X			X
G-6 <sup>c</sup>	35 ft aquifer		X			X	X
G-8 <sup>c</sup>	35 ft aquifer		X			X	X
G-12 <sup>c</sup>	35 ft aquifer		X			X	X
G-13 <sup>c</sup>	35 ft aquifer		X			X	X
G-15 <sup>c</sup>	35 ft aquifer		X			X	X
G-16 <sup>c</sup>	35 ft aquifer		X			X	X
G-24 <sup>c</sup>	35 ft aquifer		X			X	X
G-25 <sup>c</sup>	35 ft aquifer		X			X	X
G-26 <sup>c</sup>	35 ft aquifer		X			X	X

<sup>a</sup> COCs are sampled once every five years as discussed in Part I.E.2.

<sup>b</sup> SDA-1 is a subdrain discharge point in the Wet Weather Area.

<sup>c</sup> These are piezometers used for water level measurements.

<sup>d</sup> Semi-annual monitoring shall be performed each September and March.

**Table 3. Constituents of Concern (1)**

CONSTITUENTS	USEPA METHOD	UNITS
Antimony	6010	mg/l
Arsenic	7060	mg/l
Barium	6010	mg/l
Beryllium	6010	mg/l
Cadmium	6010	mg/l
Chromium	6010	mg/l
Cobalt	6010	mg/l
Copper	6010	mg/l
Cyanide	9010	mg/l
Lead	7421	mg/l
Mercury	7470	mg/l
Nickel	6010	mg/l
Selenium	7740	mg/l
Silver	6010	mg/l
Sulfide	9030	mg/l
Thallium	7841	mg/l
Tin	6010	mg/l
Vanadium	6010	mg/l
Zinc	6010	mg/l
Chlorophenoxy Herbicides	8150	µg/l
Nonhalogenated Volatiles	8015	µg/l
Organochlorine Pesticides and PCBs	8080	µg/l
Phthalate Esters	8060	µg/l
Phenols	8040	µg/l
Semi-Volatile Organic Compounds	8270	µg/l
Volatiles	8260	µg/l

(1) The Discharger shall analyze for all constituents using the USEPA analytical methods indicated above, including all constituents listed in Appendix II to 40 CFR, Part 258 (Subtitle D).

#### 4. Collection System Performance

##### a. The Leachate Collection and Removal System

Currently, only Landfill Module 3 is equipped with a leachate collection and removal system (LCRS). The LCRS contains 10 leachate collection sumps (LS3-1, 2, 3, 5 through 11). The flow volumes of the ten collection sumps at Module 3 shall be gauged quarterly and reported semi-annually. Quarterly and cumulative totals shall be prepared in tabular and graphical formats semi-annually. Disposal method of all collected volumes shall be reported. Leachate shall be analyzed for the Monitoring Parameters (Table 1) annually and for COCs (Table 3) every five years. At a minimum, Leachate samples shall be collected from two leachate collection sumps on a rotational basis. Samples shall be and analyzed for Monitoring Parameters (Table 1) annually, and COCs (Table 3) every five years.

##### b. Leachate Collection Sump North of the WWA (LS)

There has been much development since LS was installed north of the WWA. Most of the



stormwater runoff from the area is now diverted to the on-site percolation pond. Leachate collected from LS has been greatly reduced. If there is any leachate collected at LS, the leachate shall be analyzed for Monitoring Parameters annually and COCs every five years.

c. **Landfill Gas Collection System**

On-site structures adjacent to the waste deposit areas shall be monitored quarterly for percent methane concentration. All gas monitoring probes shall be monitored for methane, carbon dioxide and oxygen quarterly. Monitoring results shall be submitted to the Board in semi-annual reports and include information specified in Title 27, §20934.

5. **Storm Water Monitoring**

Storm water discharge point(s) shall be monitored in accordance with the facility's National Pollutant Discharge Elimination System permit. Water and sediment in the percolation pond shall be analyzed annually for metals listed in § 66699, Title 22, and TPH.

6. **Groundwater Flow Rate and Direction**

For each monitored groundwater body, the Discharger shall measure the water level in each well at least once during the monitoring period, including the times of expected highest and lowest elevations of the water level. The Discharger shall also determine horizontal and vertical gradients, groundwater flow rate, and flow direction for the respective groundwater body.

7. **Sample Procurement Limitation**

For any given monitored medium, samples taken from Monitoring Points to satisfy the data analysis requirements for a given Monitoring Period shall be taken within a span not exceeding 30 days, and shall be taken in a manner that ensures sample independence to the greatest extent feasible.

**PART II: SAMPLE COLLECTION AND ANALYSIS**

**A. SAMPLING AND ANALYTICAL METHODS**

Sample collection, storage, and analysis shall be performed according to the most recent version of Standard U.S. Environmental Protection Agency (USEPA) methods (USEPA publication "SW-846"), and in accordance with an sampling and analysis plan approved by the Regional Board's Executive Officer. Water analyses shall be performed by a laboratory certified for these analyses by the State of California. Specific methods of analysis must be identified. The director of the laboratory whose name appears in the certification shall supervise all analytical work in his/her laboratory and shall sign reports of such work submitted to the Board. In addition, the Discharger is responsible for seeing that the laboratory analysis of samples from Monitoring Points meets the following restrictions:

1. The methods of analysis and the detection limits used must be appropriate for the expected concentrations. For detection monitoring of any constituent or parameter that is found in concentrations which produce more than 90% non-numerical determinations (i.e. Trace) in historical data for that medium, the analytical method having the lowest MDL (MDL) shall be selected.

2. Trace results (results falling between the MDL and the Practical Quantitation Limit) shall be reported as such.
3. MDLs and Practical Quantitation Limits (PQLs) shall be derived by the laboratory for each analytical procedure, according to State of California laboratory accreditation procedures. Both limits are defined in Part V and shall reflect the detection and quantitation capabilities of the specific analytical procedure and equipment used by the laboratory. If the laboratory suspects that, due to a change in matrix or their effects, the true detection limit or quantitation limit for a particular analytical run differs significantly from the laboratory-derived values, the results shall be flagged accordingly, and an estimate of the limit actually achieved shall be included.
4. Quality Assurance and Quality Control (QA/QC) data shall be reported along with the sample results to which it applies. Sample results shall be reported unadjusted for blank results or spike recovery. The QA/QC data submittal shall include:
  - a. the method, equipment, and analytical detection limits;
  - b. the recovery rates, an explanation for any recovery rate that is outside the USEPA-specified recovery rate;
  - c. the results of equipment and method blanks;
  - d. the results of spiked and surrogate samples;
  - e. the frequency of quality control analysis;
  - f. chain of custody logs, and;
  - g. the name and qualifications of the person(s) performing the analyses.
5. QA/QC analytical results involving detection of common laboratory contaminants in any sample shall be reported and flagged for easy reference.
6. Non-targeted chromatographic peaks shall be identified, quantified, and reported to a reasonable extent. When significant unknown peaks are encountered, second column or second method confirmation procedures shall be performed in attempt to identify and more accurately quantify the unknown analyte(s).

## **B. CONCENTRATION LIMIT DETERMINATION**

1. For the purpose of establishing Concentration Limits for COC and Monitoring Parameters detected in greater than ten percent of a medium's samples the Discharger shall:
  - a. Statistically analyze existing monitoring data (Part III), and propose, to the Executive Officer, statistically derived Concentration Limits for each COC and each Monitoring Parameter at each Monitoring Point for which sufficient data exists;
  - b. In cases where sufficient data for statistically determining Concentration Limits does not exist the Discharger shall collect samples and analyze for COC and Monitoring Parameter(s) which require additional data. Once sufficient data is obtained the Discharger shall submit proposed Concentration Limit(s) to the Executive Officer for approval. This procedure shall take no longer than two calendar years;
  - c. Sample and analyze new Monitoring Points, including any added by this Order, until sufficient data is available to establish a proposed Concentration Limit for all COC and Monitoring Parameters. Once sufficient data is obtained the Discharger shall submit the proposed

Concentration Limit(s) to the Executive Officer for approval. This procedure shall take no longer than two calendar years.

2. Once established, concentration limits shall be reviewed annually by the Discharger. The past years data will be reviewed for application to revision of concentration limits. When appropriate, new concentration limits shall be proposed.

### **C. RECORDS TO BE MAINTAINED**

Analytical records shall be maintained by the Discharger or laboratory, and shall be retained for a minimum of five years. The period of retention shall be extended during the course of any unresolved litigation or when requested by the Executive Officer. Such records shall show the following of each sample:

1. Identity of sample, Monitoring Point from which it was taken, and individual who obtained the sample;
2. Date and time of sampling;
3. Date and time that analyses were started and completed, and the name of personnel performing each analysis;
4. Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used;
5. Results of analyses, and Methods Detection Limit and Practical Quantitation Limit for each analysis; and
6. A complete chain of custody log.

## **PART-III: STATISTICAL AND NON-STATISTICAL ANALYSIS OF DATA**

### **A. STATISTICAL ANALYSIS**

For Detection Monitoring the Discharger shall use statistical methods to analyze COC and Monitoring Parameters which exhibit concentrations which equal or exceed their respective MDL in at least ten percent of applicable historical samples. The Discharger may propose and use any statistical method that meets the requirements of California Code of Regulations, Title 27, §20414(e)(7). All statistical methods and programs proposed by the Discharger are subject to Executive Officer approval.

### **B. NON-STATISTICAL METHOD**

The Discharger shall use the following non-statistical method for analyzing constituents which are detected in less than 10% of applicable historical samples. This method involves a two-step process:

1. From constituents to which the method applies, compiled a specific list of those constituents which exceed their respective MDL. The list shall be compiled based on either data from the single sample or in cases of multiple independent samples, from the sample which contains the largest number of constituents.

2. Evaluate whether the listed constituents meet either of two possible triggering conditions. Either, the list, from a single well, contains two or more constituents, or contains one constituent which equals or exceeds its Practical Quantitation Limit. If either condition is met the Discharger shall conclude that a release is tentatively indicated and shall immediately implement the appropriate re-test procedure under Part III.C.

### C. RE-TEST PROCEDURE

1. In the event that the Discharger concludes that a release has been tentatively indicated, the Discharger shall carry out the reporting requirements of Part IV.C.2 and, within 30 days of receipt of analytical results, collect two new suites of samples for the indicated COC or Monitoring Parameter(s) at each indicating Monitoring Point, collecting at least as many samples per Monitoring Point as were used for the initial test.
2. Analyze each of the two suites of re-tested data using the same statistical method (or non-statistical comparison), that provided the tentative indication of a release. If the test results of either (or both) of the re-tested data suites confirms the original indication, the Discharger shall conclude that a release has been discovered and shall carry out the requirements of Part IV.C.
3. Re-tests shall be carried out only for the Monitoring Point(s) for which a release is tentatively indicated, and only for the COC for Monitoring Parameter(s) which triggered the indication. When a member of the VOC composite parameter is re-tested the results of the entire VOC composite shall be reported. In that case, a re-test shall validate the original release in the sample which initiated the re-test.

## PART IV: REPORTING

### A. MONITORING REPORT

1. A written Monitoring Report shall be submitted semi-annually by July 31 and January 31 of each year. The report shall address all facts of the Landfill's monitoring. Reports shall include, at a minimum, the following:

1. Letter of Transmittal

A letter transmitting the essential points shall accompany each report. The letter shall include a discussion of violations that occurred since the last such report was submitted. If no new violations have been discovered since the last submittal, this shall be stated in the transmittal letter. Both the monitoring report and the transmittal letter shall be signed by: for private facilities, a principal executive officer at the level of vice president; for public agencies, the director of the agency. Upon Regional Board Executive Officer approval, the cited signature can be by a California Registered Civil Engineer or Certified Engineering Geologist who has been given signing authority by the cited signatories. The transmittal letter shall contain a statement by the official, under penalty of perjury, that to the best of the signer's knowledge the report is true, complete, and correct.

2. Compliance Summary

The update shall contain at least:

- a. Discussion of compliance with concentration limits. Release indications and actions taken.
- b. For each monitored groundwater body, calculate groundwater velocity and, based upon water

level elevations taken during the Monitoring Period, graphically present groundwater flow direction under and around the Unit.

3. Graphical Presentation of Analytical Data

For each Monitoring Point in each medium, submit, in graphical format, the complete history of laboratory analytical data. Graphs shall effectively illustrate trends and/or variations in the laboratory analytical data. Each graph shall plot a single constituent concentration over time at one (for intra-well comparison) or more (for inter-well comparisons) monitoring points in a single medium. Maximum contaminant levels (MCL) and/or concentration limits shall be graphed along with constituent concentrations where applicable. When multiple samples are taken, graphs shall plot each datum, rather than plotting mean values.

4. Corrective Action Summary

Discuss significant aspects of any corrective action measures conducted during the monitoring period. Calculate pollutant load removed from the sites impacted media by mass (water, gas, leachate) removal system(s). Mass removal calculations shall be based on actual analytical data as required by Part I.E. Present discussion and indications, relating mass removal data to the violation the corrective action is addressing.

5. Laboratory Results

Laboratory results and statements demonstrating compliance with Part II and results of analyses performed at the Landfill, outside the requirements of this Monitoring and Reporting Program, shall be summarized and reported.

6. Sampling Summary

- a. For each Monitoring Point addressed by the report, a description of: 1) the method and time of water level measurement; 2) the method of purging and purge rate and well recovery time; and 3) field parameter readings.
- b. For each Monitoring Point addressed by the report, a description of the type of sampling device used, its placement for sampling, and a description of the sampling procedure (number of samples, field blanks, travel blanks, and duplicate samples taken; the date and time of sampling; the name and qualification of the person actually taking the samples; description of any anomalies).

7. Leachate Collection and Recovery System

A summary of the total volume of leachate collected each quarter since the previous monitoring report.

8. Standard Observations

A summary of Standard Observations (Part V) made during the Monitoring Period.

9. Map(s)

A map or an aerial photograph showing Monitoring Points, relative physical features, and with groundwater contours overlaid on the map or the aerial photograph to the greatest degree of accuracy possible.

**B. ANNUAL SUMMARY REPORT**

The Discharger shall submit an annual report to the Board covering the previous monitoring year. The annual Monitoring Period ends on December 31 each year. This report may be combined with the Second Semi-Annual Monitoring Report of the year and shall be submitted no later than January 31 each year. The annual report must include the information outlined above and the following;

1. Discussion

Include a comprehensive discussion of the compliance record, a review of the past year's significant monitoring system and operational changes, a summary of corrective action results and milestones, and a review of construction projects, with water quality significance, completed or commenced in the past year or planned for the up-coming year.

2. Statistical Limit Review

Statistically derived concentration limits shall be reviewed annually and revised as necessary. Data collected during the past year shall be discussed and considered for inclusion in, and determination of, proposed limits for coming year. For statistical limits that are changed from the previous year, include a comprehensive discussion of the proposed limit for Executive Officer review and consideration.

3. Analytical Data

Complete historical analytical data presented in a tabular form and on 3.5" diskettes, and Excel™ format or in another file format acceptable to the Executive Officer.

4. Leachate Collection System

Results of annual leachate system testing as required by Part I.C. At sites where leachate is used for dust control, testing that shows the leachate is non-hazardous shall be submitted annually.

5. Map(s)

A map, or set of maps, that indicate(s) the type of cover material in place (final, long-term intermediate, or intermediate) over inactive and completed areas.

**C. CONTINGENCY RESPONSE**

1. Leachate Seep

The Discharger shall, within 24 hours, report by telephone concerning the discovery of previously unreported seepage from the disposal area. A written report shall be filed with the Board within seven days, containing at least the following information:

- a. A map showing the location(s) of seepage;
- b. An estimate of the flow rate;
- c. A description of the nature of the discharge (e.g. pertinent observations and analysis); and
- d. A summary of corrective measures both taken and proposed.

2. Responses to an Initial Indication of a Release

Should the initial statistical or non-statistical comparison (under Part III. A or B) indicate that a new release is tentatively identified, the Discharger shall:

- a. Within 24 hours, notify the Board verbally as to the Monitoring Point(s) and constituent(s) or parameter(s) involved;
- b. Provide written notification by certified mail within seven days of such determination; and
- c. Either of the following:

- i. Shall carry out a discrete re-test in accordance with Part III.C. If the re-test confirms the existence of a release or the Discharger fails to perform the re-test, the Discharger shall carry out the requirements of Part IV.C.4. In any case, the Discharger shall inform the Board of the re-test outcome within 24 hours of results becoming available, following up with written results submitted by certified mail within seven days, or;
- ii. Make a determination, in accordance with Title 27, §20420(k)(7), that a source other than the waste management unit caused the release or that the evidence is an artifact caused by an error in sampling, analysis, or statistical evaluation or by natural variation in the groundwater, surface water, or the unsaturated zone.

3. Physical Evidence of a Release

If either the Discharger or the Executive Officer determines that there is significant physical evidence of a new release pursuant to Title 27, §20385(a)(3), the Discharger shall conclude that a release has been discovered and shall:

- a. Within seven days notify the Board of this fact by certified mail (or acknowledge the Board's determination);
- b. Carry out the requirements of Part IV.C.4. for potentially-affected medium; and
- c. Carry out any additional investigations stipulated in writing by the Executive Officer for the purpose of identifying the cause of the indication.

4. Release Discovery Response

If the Discharger concludes that a new release has been discovered the following steps shall be carried out:

- a. If this conclusion is not based upon monitoring for COC, the Discharger shall sample for COC at Monitoring Points in the affected medium. Within seven days of receiving the laboratory analytical results, the Discharger shall notify the Board, by certified mail, of the concentration of COC at each Monitoring Point. This notification shall include a synopsis showing, for each Monitoring Point, those constituents that exhibit an unusually high concentration;
- b. The Discharger shall, within 90 days of discovering the release, submit a Revised Report of Waste Discharge proposing an Evaluation Monitoring and Reporting Program that:
  - (1) meets the requirements of Title 27, §20420 and §20425; and
  - (2) satisfies the requirements of 40 CFR §258.55(g)(1)(ii) by committing to install at least one monitoring well directly down-gradient of the center of the release;
- c. The Discharger shall, within 180 days of discovering the release, submit a preliminary engineering feasibility study meeting the requirements of Title 27, §20420; and
- d. The Discharger shall immediately begin delineating the nature and extent of the release by installing and monitoring assessment wells as necessary to assure that the Discharger can meet the requirements of Title 27, §20425 to submit a delineation report within 90 days of when the Board directs the Discharger to begin the Evaluation Monitoring Program.

5. Release Beyond Facility Boundary

Any time the Discharger or the Executive Officer concludes that a release from the Unit has proceeded beyond the facility boundary, the Discharger shall so notify persons who either own or reside upon the land that directly overlies any part of the plume (Affected Persons).

- a. Initial notification to Affected Persons shall be accomplished within 14 days of making this conclusion and shall include a description of the Discharger's current knowledge of the nature and extent of the release.
- b. Subsequent to initial notification, the Discharger shall provide updates to Affected Persons, including any persons newly affected by a change in the boundary of the release, within 14 days of concluding there has been any material change in the nature or extent of the release.

- c.) Each time the Discharger sends a notification to Affected Persons (under a. or b. above), the Discharger shall, within seven days of sending such notification, provide the Board with both a copy of the notification and a current mailing list of Affected Persons.

## **PART V: DEFINITION OF TERMS**

### **A. AFFECTED PERSONS**

Individuals who either own or reside upon the land which directly overlies any part of that portion of a gas or liquid phase release that may have migrated beyond the facility boundary.

### **B. CONCENTRATION LIMITS**

The Concentration Limit for any given COC or Monitoring Parameter in a given monitored medium shall be either:

1. The constituent's statistically determined background value or interval limit, established using an Executive Officer approved method (Part III); or
2. In cases where the constituent's MDL is exceeded in less than 10% of historical samples, the MDL is the concentration limit defined in Part II. A.1.

### **C. CONSTITUENTS OF CONCERN (COC)**

A broad list of constituents likely to be present in a typical municipal solid waste landfill. The COC for this landfill are listed in Table 3.

### **D. MATRIX EFFECT**

Any increase in the MDL or Practical Quantitation Limit for a given constituent as a result of the presence of other constituents, either of nature origin or introduced through a release, that are present in the sampling being analyzed.

### **E. METHOD DETECTION LIMIT (MDL)**

The lowest concentration at which a given laboratory, using a given analytical method to detect a given constituent, can differentiate with 99% reliability, between a sample which contains the constituent and one which does not. The MDL shall reflect the detection capabilities of the specific analytical procedure and equipment used by the laboratory.

### **F. MONITORED MEDIUM**

Those media that are monitored pursuant to this Monitoring and Reporting Program (groundwater, surface water, liquid, leachate, gas condensate, and other as specified).

### **G. MONITORING PARAMETERS**

A short list of constituents and parameters used for the majority of monitoring activities. The Monitoring Parameters for this Unit are listed in Part I. E.

### **H. MONITORING PERIOD (frequency)**

The duration of time during which a sampling event must occur. The Monitoring Period for the various media and programs is specified in Part I.E and Table 2. The due date for any given report will be 30 days after the end of its Monitoring Period, unless otherwise stated.

### **I. PRACTICAL QUANTITATION LIMIT (PQL)**

The lowest acceptable calibration standard (acceptable as defined for a linear response or by actual curve fitting) times the sample extract dilution factor times any additional factors to account for Matrix Effect. The PQL shall reflect the quantitation capabilities of the specific analytical procedure and



equipment used by the laboratory. PQLs reported by the laboratory shall not simply be restated from USEPA analytical method manuals. Laboratory derived PQLs are expected to closely agree with published USEPA estimated quantitation limits (EQL).

**J. RECEIVING WATERS**

Any surface water which actually or potentially receives surface or groundwater which pass over, through, or under waste materials or contaminated soils.

**K. STANDARD OBSERVATIONS**

1. For Receiving Waters:

- a. Floating and suspended materials of waste origin;
- b. Discoloration and turbidity;
- c. Evidence of odors;
- d. Evidence of beneficial use – presence of water-associated wildlife; and
- e. Flow rate to the receiving water.

2. Along the perimeter of the Unit:

- a. Evidence of liquid leaving or entering the Unit;
- b. Evidence of odors;
- c. Evidence of erosion and/or exposed refuse; and
- d. Inspection of storm water discharge locations for evidence of non-storm water discharges during dry season, and integrity during wet season.

3. For the Unit:

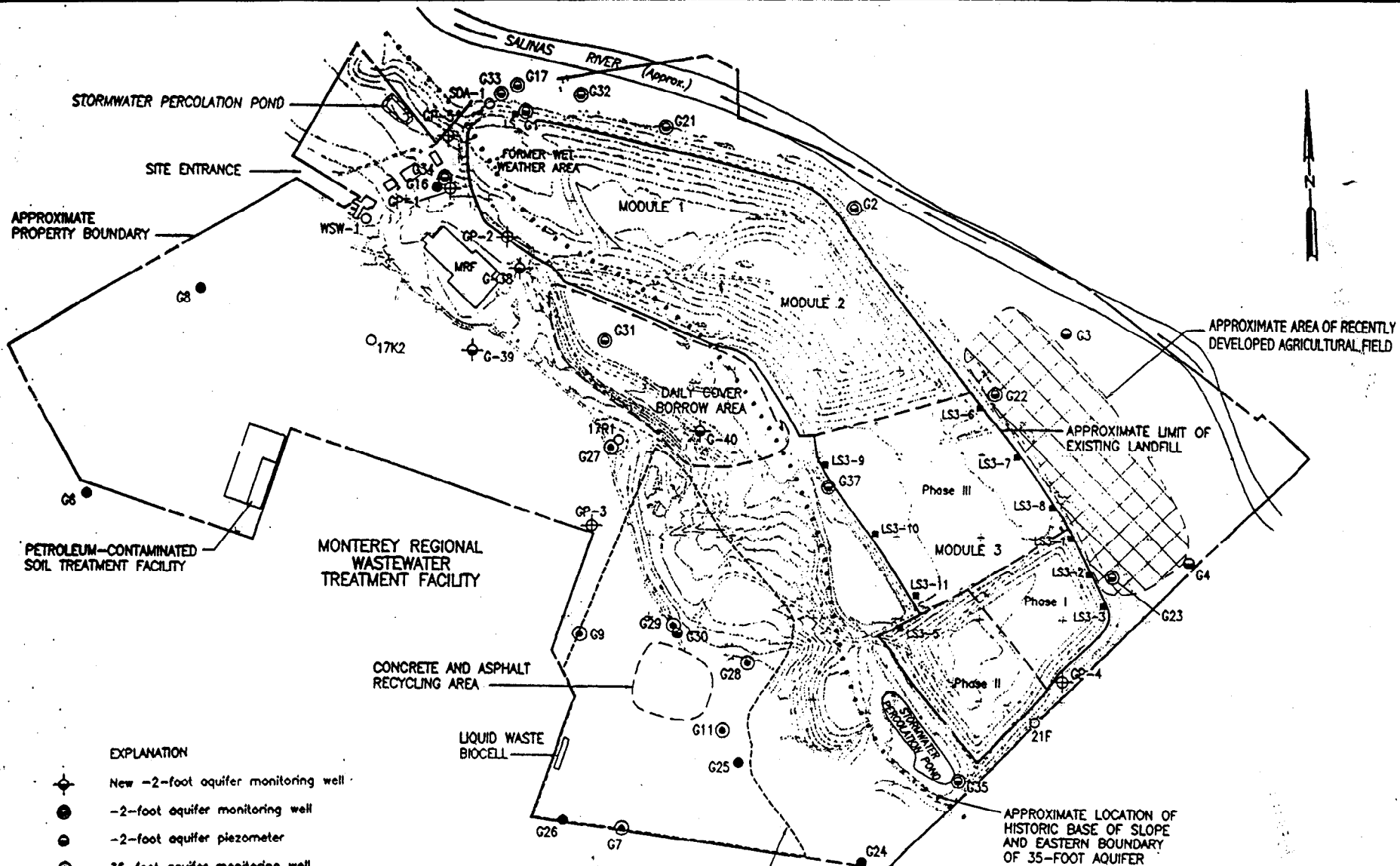
- a. Evidence of ponded water at any point on the waste management facility;
- b. Evidence of odors;
- c. Evidence of erosion and/or daylighted refuse;
- d. Compliance with Storm Water Pollution Prevention Plan, insuring that the terms of the General Permit are properly implemented; and
- e. Integrity of drainage systems.

**L. VOLATILE ORGANIC COMPOSITE MONITORING PARAMETER (VOC composite)**

VOC composite, a composite parameter that encompasses a variety of VOCs. The constituents addressed by the VOC composite Monitoring Parameter includes all VOCs detectable using USEPA Methods, 8260 (water) and TO-14 (gas).

**M. WATER MONITORING [For Detection and Corrective Action Monitoring]**

The Discharger shall monitor water bearing media as outlined below. Sampling, analyses, and reporting shall follow MRP No. 99-028, Parts II, III, and IV. The Discharger shall ensure enough samples are taken, at each monitoring point, to qualify for the most appropriate statistical analysis method outlined in MRP No. 99-028, Part II.



#### EXPLANATION

- ◆ New -2-foot aquifer monitoring well
- -2-foot aquifer monitoring well
- -2-foot aquifer piezometer
- ⊙ 35-foot aquifer monitoring well
- 35-foot aquifer piezometer
- Subdrain SDA-1
- Leachate collection sump
- ⊕ Landfill gas probe
- Production well

0 700 1400

SCALE IN FEET

**Attachment A**  
**Ground Water and Gas**  
**Monitoring Location Map**  
**Marina Class III Landfill**  
**Monterey County, California**

Taken from Emcon project no. 144-001.043 (July/1999)